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	<u>A</u>	<u>A-1</u>	<u>A-2</u>
Smoked Sheets	70		
Whole Tire Reclaim	70		
Mineral Rubber	10		
Zinc Oxide	5		
Stearic Acid	1		
AgeRite Powder	1		
Sulfur	3		
Captax	1		
Thermax	—	20	—
Kalite No. 1	—	—	30

MODULUS @ 500% ELONGATION, TENSILE @ BREAK, % ELONGATION @ BREAK

5 min. @ 30 lbs.	460	1670	775	670	1620	700	580	1710	740
10 " " " "	730	2140	695	990	2180	690	910	2350	710
20 " " " "	1130	2560	680	1210	2520	660	1220	2540	670
30 " " " "	1250	2640	660	1330	2620	645	1345	2730	665
45 " " " "	1300	2590	650	1440	2570	635	1445	2670	625
60 " " " "	1250	2420	640	1460	2490	630	1420	2660	640
90 " " " "	1190	2350	660	1320	2350	625	1320	2460	640
120 " " " "	1140	2270	650	1230	2250	625	1260	2340	640



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Restriction Agreement

Rubber Regulation¹

WHEREAS, it has been considered necessary and advisable that steps should be taken to regulate the production and export of rubber in and from producing countries with the object of reducing existing world stocks to a normal figure and adjusting in an orderly manner supply to demand and maintaining a fair and equitable price level which will be reasonably remunerative to efficient producers.

Now it is hereby agreed between the parties hereto that it is desirable that the following provisions should be carried out and for this purpose that the Governments of the respective Territories mentioned in Clause 2 hereof be invited forthwith to enact legislation for the purpose of carrying them into effect.

1. For the purposes of this Agreement:—

"Regulation" means the provisions of this Agreement.

"Governments" or "Government" (unless the context indicates otherwise) means the Governments or the Government of the respective Territories mentioned in Clause 2 hereof.

"Basic quotas" means the quotas referred to in Clause 4 hereof.

"International Rubber Regulation Committee" means the International Rubber Regulation Committee referred to in Clause 10 hereof.

"Control year" means any calendar year during the continuance of the Regulation or in the case of the year 1934, the portion of that year between the date agreed by the Governments as being the date upon which the Regulation shall become effective and the 31st December, 1934.

"Rubber plant" means and includes plants, trees, shrubs or vines of any of the following:—

- (A) *Hevea Braziliensis* (Para Rubber)
- (B) *Manihot Glaziovii* (Ceara Rubber)
- (C) *Castilloa elastica*
- (D) *Ficus elastica* (Rambong)

(E) Any other plant which the International Rubber Regulation Committee may decide is a rubber plant for the purpose of this Regulation

"Rubber" includes (A) rubber prepared from the leaves, bark or latex of any rubber plant and the latex of any rubber plant, whether fluid or coagulated, in any stage of the treatment to which it is subjected during the process of conversion into rubber, and latex in any state of concentration, and (B) all articles and things manufactured wholly or partly of rubber.

"Replanting" or "replant" means planting during the period of the Regulation more than 30 rubber plants on any acre or 75 rubber plants on any hectare of any area carrying rubber plants at the date the Regulation becomes operative.

"Permissible exportable amount" means the quantity of rubber, which is equivalent to such percentage as may from time to time be fixed by the International Rubber Regulation Committee as the percentage of the basic quota which may be exported.

"Net exports" means the difference between the total imports

of rubber into a Territory during a period and the total exports of rubber out of that Territory during the same period provided that notwithstanding the meaning attached to "rubber" elsewhere in this Agreement, imports or reexports of articles and things manufactured wholly or partly of rubber and rubber consumed in the country of production shall not be included in arriving at net exports.

"Owner" means and includes the proprietor, occupier or person in the possession or in charge of a holding or such person as is in the opinion of the Government concerned the Manager or Agent of or entitled to act for or on behalf of such proprietor, occupier or person.

"Holding" means land on which rubber plants are grown which is in the ownership possession or occupation or is being worked by or under the control of the owner.

"Person," unless the context otherwise requires, includes a company, corporation, partnership or other body of persons, whether corporate or not.

2. The Regulation to apply to the following Territories:—

Straits Settlements, Federated Malay States, Unfederated Malay States, Labuan and Brunei

Netherlands India

Ceylon

India, including Burma

French Indo-China

State of North Borneo

Sarawak

Siam

3. (A) The Legislation hereinbefore referred to is to be reciprocal as between the respective Governments for the purpose of maintaining, operating, adhering to and enforcing the Regulation for a minimum period commencing on the first day of June, 1934, and terminating on the 31st December, 1938.

(B) Not more than 12 calendar months and not less than 9 calendar months prior to the expiration of the period hereinbefore mentioned the International Rubber Regulation Committee shall make a recommendation to the Governments as to the continuance or otherwise of the Regulation.

(C) Each Government to signify to the International Rubber Regulation Committee its acceptance or rejection of the recommendation referred to in Sub-clause (B) hereof within 3 calendar months after such recommendation shall have been so communicated to it.

4. For the purpose of determining from time to time the per-

EDITOR'S NOTE: Terms of the restriction agreement, dated April 28, 1934, and proposed by the rubber producing countries mentioned herein, the powers and functions of which are to be conferred upon the International Rubber Regulation Committee by the various Governments.

¹ Issued by The Rubber Growers Association, Inc., 2-4 Idol Lane, Eastcheap, London, E.C.3, England.

missible exportable amounts the Governments of the following Territories to adopt as basic quotas for their respective territories the following annual quantities in tons of 2,240 English pounds dry rubber:—

	1934	1935	1936	1937	1938
	Tons	Tons	Tons	Tons	Tons
Straits Settlements.....					
Federated Malay States...	504,000	538,000	569,000	589,000	602,000
Unfederated Malay States					
Labuan and Brunei.....					
Netherlands India	352,000	400,000	443,000	467,000	485,000
Ceylon	77,500	79,000	80,000	81,000	82,500
India	6,850	8,250	9,000	9,000	9,250
Burma	5,150	6,750	8,000	9,000	9,250
State of North Borneo.....	12,000	13,000	14,000	15,500	16,500
Sarawak	24,000	28,000	30,000	31,500	32,000
Siam	15,000	15,000	15,000	15,000	15,000

The basic quotas for the control year 1934 to be proportionate to the amounts provided above for the whole of that year.

5. The Governments (except as hereinafter provided) to limit the net exports of rubber from their respective Territories to such percentage of the basic quota applicable to each such Territory as shall for the time being be fixed by the International Rubber Regulation Committee, provided that (except in the case of Siam) such percentage shall be the same for each Territory. In the case of Siam the minimum permissible exportable amount shall for the year 1934 be not less than 50% of the basic quota for that Territory and for the years 1935, 1936, 1937, and 1938 shall be not less than 75%, 85%, 90%, and 100%, respectively.

The adherence of the Government of the Straits Settlements to the whole terms of the Regulation to apply only to the Territories of Province Wellesley, Dindings, Malacca, and Labuan. In the Islands of Singapore and Penang the Government of the Straits Settlements to implement the policy of control by:—

(A) Restricting the actual production of rubber to such an amount in each control year as would have been equal to the permissible exportable amount if the said Islands had been subject to the whole of the Regulation, and

(B) Adhering to Clause 7 as regards control of importation, and Clauses 10, 11, 12, 13, 16, 17, 18 and 19, and

(C) By cooperating in the sense of Clause 8 of this Agreement.

6. The Government of French Indo-China to exercise control so as to maintain a complete record of the total quantity of rubber leaving its territory and to agree that on the happening of the events hereinafter mentioned it will cause to be delivered as provided in Sub-clause (E) hereof free of cost and all changes the quantities of rubber in the form of Singapore standard sheets or Singapore standard crepe as are specified in Sub-clauses (A) or (B) hereof, as the case may be:—

(A) If in any control year the total quantity of rubber leaving French Indo-China for any part of the world shall exceed 30,000 tons (of 2,240 English pounds) but shall be less than the total quantity of unmanufactured rubber entering and retained in France in that year the quantity of rubber to be delivered to be equivalent to 10% of the amount by which the total quantity of rubber leaving French Indo-China exceeds 30,000 tons.

(B) If in any control year the total quantity of rubber leaving French Indo-China exceeds the total quantity of unmanufactured rubber entering and retained in France in that year, the quantity of rubber to be delivered to be equivalent to 10% of the difference between 30,000 tons and the amount of the retained quantity aforesaid, together with an additional quantity corresponding to a percentage of the difference between the total quantity of unmanufactured rubber entering and retained in France and the total quantity of rubber leaving French Indo-China for any part of the world during that year such percentage being the average percentage of reduction of basic quotas which shall have been applied in that year in the Territories specified in Clause 4 hereof.

(C) The quantities above mentioned or referred to, to be proportionately reduced for the control year ending the 31st December, 1934.

(D) Provided, however, that the quantity of rubber to be delivered by French Indo-China in any control year shall not exceed a quantity equal to the percentage of the total quantity of rubber leaving French Indo-China corresponding to the average percentage of reduction of the basic quotas which shall have been applied in that year in the Territories specified in Clause 4 hereof.

(E) The quantities of rubber referred to in Sub-clauses (A), (B) and (C) hereof to be notified to and agreed with the International Rubber Regulation Committee, and to be delivered to the order of the International Rubber Regulation Committee in Singapore (or any other port or place selected by the International Rubber Regulation Committee) within 3 months after the expiration of the control year in question.

7. The Governments to prohibit under penalties that will be effectively deterrent the export of rubber, unless it is accompa-

nied by a Certificate of Origin authenticated by an official empowered by the Government of the Territory concerned to issue such a document and to prohibit under similar penalties the importation of rubber, which is not covered by such accompanying Certificate of Origin and such penalties to include the destruction of the rubber.

8. The Governments to cooperate with each other to prevent smuggling evasions and other abuses of the Regulation by their own and other nationals.

9. It shall not be a breach of the Regulation if the net exports from any Territory specified in Clause 4 hereof in any control year exceed the total permissible exportable amount for that Territory for that year by a quantity not greater than 5% of that amount, but the total permissible exportable amount for the next subsequent control year for such Territory shall be reduced by the excess exported in the immediately preceding control year. If any such Territory has exported in any control year less than its permissible exportable amount it shall be entitled to export such deficiency in the control year immediately following, but not to a greater amount than 12% of the permissible exportable amount for the control year in which the deficiency occurred.

10. The Governments to agree that an International Committee to be designated "The International Rubber Regulation Committee" shall as soon as possible after the signing of this Agreement be constituted of Delegations appointed by the respective Governments of the Territories concerned as follows:—

Straits Settlements, Federated Malay States, Unfederated Malay States, Labuan, Brunei	6 members (3 alternates)
Netherlands India	5 members (3 alternates)
Ceylon	2 members (1 alternate)
India, including Burma	1 member (1 alternate)
French Indo-China	1 member (1 alternate)
State of North Borneo	1 member (1 alternate)
Sarawak	1 member (1 alternate)
Siam	1 member (1 alternate)

The Committee shall be competent to act so soon as not less than 6 Delegations shall have been appointed. Each Delegation to vote as one unit by one member thereof and to communicate the name of its voting member to the International Rubber Regulation Committee. The principal office of the Committee to be in London and the meetings to be held in London and the proceedings to be conducted in English. Voting at meetings of the International Rubber Regulation Committee to be calculated on the basis of one vote for every complete 1,000 tons of the basic quota of the control year for the time being of each Territory and for the purpose of voting the Territory of French Indo-China shall be deemed to have the following quotas, viz.:—

1934	22,500 tons
1935	27,000 tons
1936	34,000 tons
1937	44,000 tons
1938	52,000 tons

Decisions to be arrived at by a bare majority of votes cast by the respective Delegations present and the presence of voting representatives of at least 4 Delegations to be necessary to constitute a quorum at any meeting, provided that in the case of the fixing or varying of the permissible exportable percentage of the basic quotas or in making, modifying or abrogating the rules of procedure a ¾ majority of the total votes which could be cast by all the Delegations entitled to vote, whether present or not, shall be necessary. If within an hour after the time appointed for any meeting a quorum as above defined is not present, the meeting (except for the purpose of fixing or varying the permissible exportable percentage of the basic quotas or of making, modifying or abrogating the rules of procedure) shall stand adjourned to the same day in the next week at the same time and place, and if at such adjourned meeting a quorum is not present those Delegations who are present at such adjourned meeting shall constitute a quorum. The Delegation representing French Indo-China not to be entitled to participate in any discussion or voting on the permissible exportable percentage of the basic quotas until such time and for so long as that Territory is conforming to the regulation on the basis of Clause 6 (B) of this Agreement.

11. The Governments to confer on the International Rubber Regulation Committee the powers and functions devolving upon it under this Agreement and the Schedule thereto.

12. The Governments to agree that the International Rubber Regulation Committee shall be empowered to and shall within one month after it is competent to act invite the body or bodies they consider most representative of rubber manufacturers in Europe and America to nominate 3 persons representative of such manufacturers and such representatives shall form a panel who will be invited to tender advice from time to time to the International Rubber Regulation Committee as to world stocks, the fixing and varying of the permissible exportable percentage of the basic quotas, and cognate matters affecting the interests of rubber manufacturers.

13. The Governments to give the International Rubber Regulation Committee all reasonable facilities and assistance, including the necessary statistical information for the proper and efficient discharge of its duties.

14. Each Government to provide by the levy of a cess or in such other way as it may deem desirable for the expenses of the administration of the Regulation within its territory and for the expenses of the Delegation representing its territory in connection with the work of the International Rubber Regulation Committee and (except in the cases of Sarawak and Siam) for the contribution half-yearly in advance in proportion to the basic quota attributed to its Territory, or in the case of French Indo-China, in proportion to the quotas specified in Clause 10 hereof of such amount as the International Rubber Regulation Committee may consider necessary for its expenses.

15. The Governments to prohibit under penalties that shall be effectively deterrent any owner within their respective Territories from having in his possession or under his control in their respective Territories at any time stocks of rubber exceeding 20% of the quantity of rubber wholly grown and produced and removed from his holding during the preceding 12 months or alternatively a quantity equivalent to twice the amount he is entitled to export during any month. Each Government to limit the total of all other stocks of rubber in its Territory to a quantity not exceeding 12½% of its permissible exportable amount for the control year, provided that the Governments of Sarawak and Siam are not to be bound by the express terms of this clause but undertake respectively to limit stocks within their respective Territories to normal proportions having regard to the objects of the Regulation.

16. The Governments to prohibit absolutely (except as provided in this and in Clause 17) under penalties that shall be effectively deterrent, the planting of rubber plants during the period of the Regulation, such penalties to include the compulsory eradication and destruction at the expense of the owner of the plants so planted, provided that as regards Siam it shall be permitted to plant during the period of the Regulation an area not exceeding in the aggregate 31,000 acres. It shall not be a breach of this clause if a Government permits the planting of small areas for exclusively experimental purposes, provided that during the period of the Regulation the total area of such permitted plantings in any Territory shall not exceed the equivalent of ¼ of 1% of that Territory's ascertained total area planted at the date of commencement of the Regulation. Each Government to declare its total ascertained planted area to the International Rubber Regulation Committee within 6 calendar months after the Regulation becomes operative.

17. The Governments to permit limited replanting of areas at present carrying rubber plants upon the following conditions: An owner who desires to replant part of his holding to be placed under the obligation first to notify the Government concerned of his intention to replant and to give such particulars of the proposed replanting as may be required by the Government concerned, and he shall then have the right to replant in any control year (but subject to a proportionate reduction in the first control year) to the extent set out in such particulars not exceeding 10% of the total area of his holding planted in the Territory of that Government at the date of commencement of the Regulation, provided that the aggregate of the areas so replanted during the period of the Regulation shall not exceed 20% of such total planted area of his holding. The Governments to impose penalties which shall be effectively deterrent in respect of any breach of the provisions of this clause, such penalties to include the compulsory eradication and destruction at the expense of the owner of the plants planted in excess of that permitted by this clause.

18. The Governments to prohibit under penalties that shall be effectively deterrent anyone from exporting any leaves, flowers, seeds, buds, twigs, branches, roots, or any living portion of the rubber plant that may be used to propagate it.

19. Each Government to give ample facilities to the duly accredited agents of the International Rubber Regulation Committee for the purpose of investigating how the obligations of the Regulation are being carried out.

20. The parties to this Agreement recognize that a natural balancing of production and consumption can be hastened by research with a view to developing new applications and by propaganda and invite the Governments (i) to levy and collect a uniform cess on the net exports from their respective Territories during the period of the Regulation for the purpose of supporting such research and propaganda, and (ii) to cooperate in constituting an International Rubber Research Board to plan the research and propaganda. The Governments of Sarawak and Siam are not to be bound to make any contribution under this clause.

Schedule

Powers and functions to be conferred upon the International

Rubber Regulation Committee by the various Governments (vide Clause 11 of Agreement):—

1. To fix and from time to time to vary the permissible exportable percentage of the basic quotas.

2. To agree the quantities of rubber which have to be delivered by the Government of French Indo-China in compliance with the Regulation, and to deal with and dispose of for its own benefit or as it thinks fit any stocks of rubber so delivered; also to make recommendations to any other Government regarding the disposal of any rubber which may come into ownership of any Government in the carrying out of the Regulation within its Territory.

3. To collect and publish statistical information.

4. To receive and consider the advice which may be tendered from time to time by the panel of representatives of manufacturers referred to in Clause 12 of the Agreement.

5. To advise and to make recommendations to the Governments on all matters relating to the Regulation, including its continuation, termination and liquidation.

6. To give such publicity to its actions as it may deem necessary or desirable.

7. To exercise the powers to be conferred pursuant to Clause 19 of the Agreement.

8. To arrange such office and other accommodation as it may require.

9. To appoint and pay officers and staff.

10. To draw up, put into force, modify or abrogate rules for the conduct of its business and procedure at its meetings in addition to those specified above, and in particular to adopt the following procedure:—

(A) The Committee to elect its own Chairman and Vice Chairman. The Chairman and Vice Chairman not to be elected from the same Delegation.

(B) Meetings to be convened on the authority of the Chairman, or in his absence, the Vice Chairman.

(C) The Chairman to convene a meeting within 7 days after being so requested by a Delegation.

(D) The first meeting of the Committee to be held within one calendar month after it is competent to act and thereafter not more than 3 calendar months to elapse between any 2 consecutive meetings.

11. To do all such other lawful things as may in the opinion of the Committee be necessary, incidental or conducive to the carrying out of its powers and functions.

New Quotas

The International Rubber Regulation Committee just announced that the percentages of the basic export quotas which may be exported during 1934 are as follows: June-July, 100; August-September, 90; October-November 80; December, 70.

Rubber Absorption—1933¹

THE total absorption of crude rubber in the United States during 1933 amounted to 406,000 tons as compared with 332,000 tons in 1932. In the early part of the year the country was still in the throes of the depression, and absorption fell from 23,000 tons in January to 18,000 tons in March, the lowest level to which the industry had fallen since 1925. In February and March the financial crisis seriously affected the rubber market. Confidence was restored by the election of President Roosevelt; and subsequent recovery measures, the abandonment of the gold standard, and the depreciation of the currency caused a rapid rise in prices and a revival of business activity, which was shared by the rubber industry. This revival, superimposed on the normal seasonal improvement in the rubber industry during the first half of the year caused the absorption of crude rubber to rise to 51,326 tons in June, the highest figure on record. The July figure also exceeded 50,000 tons, but after that there was a seasonal decline to 29,000 tons in December. During the first 3 months of 1934 absorption has averaged over 40,000 tons a month.

Stocks of crude rubber in the United States show a fall of 8,000 tons during 1933, if calculated from absorption and net imports: absorption, 406,000 tons; net imports, 398,000 tons; decrease in stocks, 8,000 tons.

According to the independently calculated stocks in the hands of manufacturers and dealers the decrease was 15,000 tons. The amount of disagreement is comparatively small compared with the total stock of about 364,000 tons at the end of 1933 according to figures of the Rubber Manufacturers Association, Inc.

¹ Bull. Rubber Growers' Assoc., Apr., 1934, pp. 201-10.

Rubber Silenced Railway Train¹

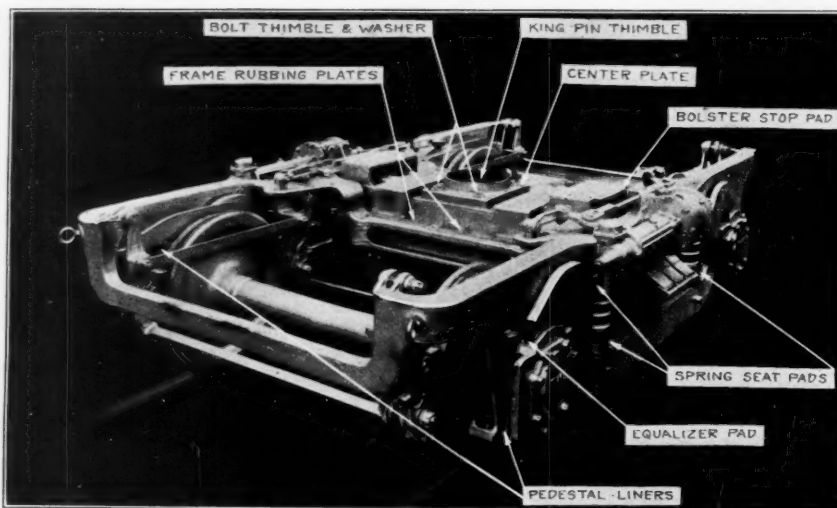
Comfort and Quiet Insured by Use of Rubber in High-Speed Streamlined Train

THE latest design of rubber silenced railway trains is embodied in the streamlined Burlington "Zephyr," now on an exhibition tour taking in the principal cities across the continent; after which the "Zephyr" will be shown this summer at the Century of Progress Exhibition in Chicago, Ill.

This Diesel-propelled articulated train brings into prominence the latest and most effective method of distributing rubber to attain the goal of smooth riding at high speed. It is accomplished not by any radical change in design, but rather by inserting rubber pads at the critical points where sound and vibrations originate or would be transmitted.

The rail is the source of many audible and vibratory impulses. Any little roughness in the track causes the clatter of steel on steel as well as a jouncing. Rail intersections are sources of clatters and jolts. Switches, crossovers, and frogs cause disturbances which have been known to create shocks to the unsprung weight equaling 30 to 40 times the force of gravity. The greater part of these jarring forces is lost in the coil springs, but the sound is carried by undiminished intensity. To absorb this noise as well as further to cushion the shocks, rubber pads are placed over the journal boxes and under the plates on which the equalizers bear. In addition seating the coil springs themselves on rubber plates assists very largely in the elimination of noise.

On either side of the journal boxes are the pedestal liners which could act as sound carriers to transmit not only the track noises but also the scraping of pedestals on the journal box guides. To block this carrier path, therefore, U-shaped sections of rubber are placed between the contact surfaces and the truck frame. Now all channels of sound transmission and shock from the track have been insulated, but there are still possibilities of disturbances caused by rubbing or bumping in the



U. S. Rubber Co.

Rubber Silenced Truck of the Burlington "Zephyr"

truck structure itself.

Between the frame and the bolster are several opportunities for scraping and clashing. As the train swings from side to side, there is vibration set-up in the swing hanger pins and crossbar and rubbing of the bolster on the frame transom. It is also established at the point where the travel of the

bolster is arrested by the side frame. The bumping is eased by a large rubber slab attached to each end of the bolster. The rubbing vibrations between bolster and frame are decreased by plates of rubber. This leaves, however, the path through the swing hanger and springs. These remaining vibrations must then be removed at the last major points of contact between the truck and body. To accomplish this removal large squares of rubber are placed in pockets under the center plate and side bearings. There still remains one small leak through the king pin, but this is blocked by placing rubber thimbles at points of metallic contact.

The points where rubber is applied in the construction of the truck are indicated in the illustration. Thus the truck is completely insulated from the car body by a non-oxidizing low cold flow test rubber. The rubber is loaded at sufficiently low unit pressure to insure long life as expected in railroad service. Two other enemies of service in rubber must be guarded against. One is oil; in which case protective covers must be used. The other is wear; for which reason wear plates are vulcanized to the rubber at necessary points.

With a little forethought in design rubber can be so placed as to insure a more quiet truck which will transmit a minimum amount of vibration into the body of the car.

STANDARDS FOR RUBBER GOODS. Among the widely used A. S. T. M. standards on electrical insulating materials are those on friction tape, rubber insulating tape, rubber gloves, and matting, prepared by Committee D-9.

¹ Constructed by the Edward G. Budd Mfg. Co., Philadelphia, Pa., for the Chicago, Burlington & Quincy Railroad.

All-Weather Coats

An Unusual Line of Paris-Styled Sportcoats



Rifleman

Triangle

Turf

LET us turn our thoughts a few years back and consider the styles then, especially the raincoats. Do you remember them? One saw hordes of slicker-clad men and women; while wearers of the trench coat were legion.

Many of these coats, besides, were made practically under sweat-shop conditions by fly-by-night concerns who could and did undersell the legitimate manufacturer. This competition formed a serious problem that worried many a firm, and it was rendered more acute by the recent depression which compelled consumers to become thrift-conscious.

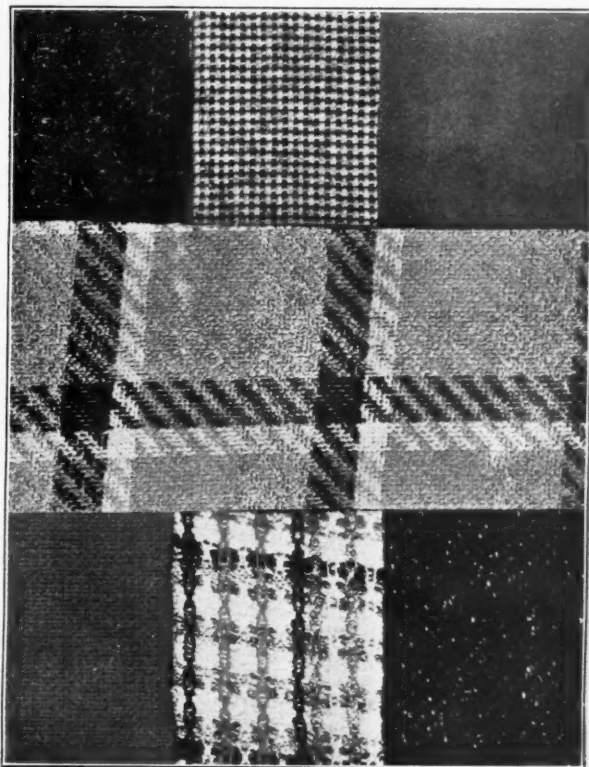
But the female of the species is a funny creature. Even in the midst of rigid economy she wants style, style, and more style. That feminine trait helped the United States Rubber Co. solve its rainwear problem. Confronted with cut-throat competition on standardized models, the company decided to give women raincoats, but coats that had quality, serviceability, and style. Undoubtedly these garments would cost more than the ordinary raincoat; yet they would be well worth the extra sum spent because they would be so styled that they could be worn not only on rainy days but also for general and sports wear.

How did the company go about meeting the standards it had set? As quality is always a point of honor with the organization, that detail was really no added difficulty after all. But serviceability and style? Take the former. How often does it really rain here, that is rain during hours when milady must venture forth; or how often does it pour hard and long enough to necessitate wearing a raincoat? Very little, all told. Certainly not enough

to justify buying a good coat at a fairly high price. Yet if the garment is so fashioned that it does not reek of rubber, does not shriek raincoat in every line—in short, if the coat resembles a general sport or town coat suitable for shopping, traveling, “knocking about in” on days that threaten rain as well as on days when Jupiter Pluvius reigns supreme—ah! that’s another story. Such a coat unquestionably will successfully tempt even the most frugal—especially if it has style.

By style we do not mean designs out of Hollywood. These creations actually are fads, introduced to thousands of women all at once, adopted alike by Judy O’Grady and the Colonel’s lady, and hastily discarded by the latter as soon as she sees her cook wearing a cheap imitation. When the discriminating woman rejects a mode her more style-minded followers, preferring less common fashions, do likewise. Then that fad is over.

Silk-Lined Schoon- Black and White Jersey White China-Silk Lined
er Blue Wool with with Black, Grey, Red, Beaver - Brown Peach-
White Hairs and Blue Plaid on Back skin



(Center) Brown, Yellow, and White Plaid Tweed

Tan Wool Flannel
with Tan and White
Checked Reverse

Tweed of Black,
White, and Green
Plaid

Bouclette Tweed of
Navy Blue with
White Flecks

The rubber rain-cape sponsored by the Chicago fair last year is a shining example.

But genuine style is different. This now, as always, means Paris. Let us consider how a fashion comes into being. One of the Famous Forty will have designed for her an original creation, be it hat, coat, or dress, nothing exactly like which is being shown at the moment. Worn at the Ritz, Longchamps, or Deauville, it is the cynosure of all eyes. Other well-dressed women want it. They consult their couturiers. They secure similar models. Fashion experts flash the news to their houses in America. Fifth Avenue stores purchase originals and make copies. The less expensive shops next obtain samples, and so on down the line in price scale. By the time, though, the style reaches the masses, it no longer is *the style*. The fashionable world of Paris is featuring something different. Thus Paris again is the style setter.

Such was the reasoning of U. S. Rubber. The result: It would adopt Paris styles for its raincoats that could be worn in any weather. But French raincoats are notoriously wanting as such. What to do? Why, copy the sport coats at the Paris openings, those creations that lend themselves so well to such service. And so were born the U. S. Rubber Paris-styled coats that are unique in the realm of wearing apparel.

Now for the coats themselves. One is smarter than the next, and all wear well. Just look at the illustrations. Chic in every line. Notice the military note, always popular in raincoats. Even the names suggest "there's something about a soldier." See the padded shoulders, the cavalry curb chain on the belt, the interesting buttons, the belt and collar treatments. Raincoats were never like this!

The materials used were undreamed of for such a purpose a few years ago. In fact only the most expert will detect the presence of rubber in these fabrics. They do not feel like rubber or give off a rubber odor. Most of the materials are China-silk lined, and between the outer textile and the lining is the rubber making the coat waterproof. But so cleverly is the work done that the 3 different textures seem a single unit.

In manufacturing these garments current fabric dictates also are heeded. Thus the coats come in wool flannel, hairy wool, bouclette tweed, lacquered silks, perforated suede, broadcloth, jersey, and suede cloth, particularly Peachskin—a wide variety that admits of many stunning treatments and is a far cry from the cotton and the gabardine of trench-coat days.

The selection of colors, too, represents a radical departure from previous practice. The rubber company receives an advance color card for the coming season from textile associations. From these guides are chosen the leading shades best suited for coats. Thus this



spring blue is favored — not any blue, but the schooner hue resembling navy. Look in the millinery and dress shops; you'll find the color predominating and then understand how closely the company follows style trends. Gay plaids and checks, especially the latter, likewise are popular. Black and white check jersey with a dark plaid of black,

grey, red, and blue on the reverse makes a sporty model. Most attractive is a black, white, and green plaid in a tweed effect. Another arresting tweed is a brown, yellow, and white plaid. Monotones, too, are always good.

Since women's styles are as fickle as their wearers and vary with the season, U. S. Rubber offers new raincoats twice a year, every spring and every fall, for the retail trade. Then with the next season the best-sellers of the past one are made for wholesale and jobber distribution and mail-order houses. Men's styles, incidentally, since they change more slowly and last longer than madame's, are to the rubber manufacturer less of a problem, although they also are being developed for general wear.

Let us examine some of these women's models, the better to realize how well they are adapted for general use. Take the Rifleman for example. This Lyolene double-breasted coat of brown suede cloth with its 6 large wooden buttons flaunts 4 pockets, 2 on each side, one above the other. The neat little collar may be worn flat or turned up. The belt, too, acknowledges a very popular trend this season. It neither buckles nor snaps; instead it is knotted in front.

Or perhaps you prefer the Triangle coat. This is a Vera Borea design with straight, swift lines, a big, sharp-pointed overlap, a brief half-belt, slash pockets, and bright metal triangular buttons. It is of lightweight suede-finish Peachskin in polo, beaver-brown, sunrust, eel grey, navy blue, and black.

That Turf model is swank to the nth degree. It is another Lyolene achievement. It is quite masculine and military with its severe lines, straight back, metal buttons, cavalry curb chain on the belt, and padded shoulders. Padded shoulders, by the way, are most unusual in raincoats because of the difficulty in making them. (Score another point for U. S. Rubber.) Note also the intriguing collar treatment and single pocket on the right with the extra flap on the belt above. This number appears in burgundy or black wool flannel and in black, polo, beaver-brown, navy, and sunrust Peachskin.

A black crepe-de-chine raincoat, a reproduction of a Mainboucher dressmaker coat, also offers something rare in rainwear. The back of the coat is pleated high at the shoulder line, giving a swagger effect. Commendable also are the large outside pockets and the neat metal buttons. Here, too, is another typical Paris touch. The bottom button should be left open.

(Continued on page 42)

Rubber Printing Rollers

Joseph Rossman, Ph.D.

THIS article is confined to patents for rubber rollers used on printing presses, lithographing presses, and offset presses for inking the type, form, stone, or etching, or for transferring or distributing the ink from one roller to another, and from the inkwell or fountain to a roller. Rollers for these purposes have been made of various materials. Such rollers consist generally of a metallic stock, shaft, or core, which is either coated with a resilient material or composition or wrapped with such material.

Typical rollers for printing presses are usually coated with a composition of (1) glue or gelatin with glycerin, molasses, or some other hygroscopic material, (2) vulcanized rubber, or (3) vulcanized oil. For lithographing presses the stock has been usually wrapped with flannel and covered with leather. In the operation of the press rollers of this type transfer the ink or water from a well or reservoir to the form and distribute it uniformly over the whole form, etching, or stone. For this purpose a series of rollers is generally employed. The customary practice is to interpose a metallic roller between 2 resilient rollers, some of these rollers, notably the form rollers, being supported mainly in bearings, while the remainder of the rollers rest with their weight partly on the roller underneath. It is extremely important for the proper distribution of the ink or water that the rollers touch each other at all points along their length, and that there are no so-called "low spots" along the entire length where the contact is not perfect. The necessity of this perfect contact along the peripheral edge of the rollers has long been realized, and manufacturers endeavor to make them as nearly perfect cylindrically as modern shop practice will allow.

Each of the 3 basic materials used for printers' rollers has certain advantages and disadvantages, which are discussed in patent No. 1,669,942 to Oscar Linder as follows:

"The printer's roller composition is ordinarily considered the best ink distributing medium. This composition can be made of any desired softness by using the proper proportions of its ingredients. It has its disadvantages however. It is readily affected by changes in atmospheric temperature and humidity, principally due to the hygroscopicity of the glycerin, which results in hardening or softening and in shrinkage or expansion. Furthermore, a roller composition which has the softness and tackiness desired, lacks resiliency, and is likely to melt and burst on warm and humid days while the roller is in use. It also has the disadvantage that it cannot be trued on the rigid stock or core, if through faulty manufacture or through pressure, it is not concentric on the rigid core.

"Vulcanized oil as a coating has the advantage that it can be produced in any desired consistency, and a roller made from it is practically unaffected by ordinary changes in temperature and humidity as far as dimensions and consistency of the roller are concerned. Vulcanized oil of the desired softness, however, has the following disadvantages: it is mechanically weak and is

easily damaged in use; it fails to withstand the abrasive and cutting action of the type; it has a tendency to absorb the oils and vehicles of inks and cause them to thicken and to dry too fast during printing; it lacks the resiliency or life desired for a roller material; it cannot be ground or otherwise trued, therefore must be molded in carefully made and expensive molds.

"Rubber, as a roller covering has the advantage that it is practically unaffected by ordinary changes in temperature and humidity, and further, that it is mechanically strong, tough and not readily injured. It has the serious disadvantage, however, that it absorbs oils from printing inks, and, thereby becomes sticky and swells, so that when it is made of a consistency soft enough for use in inking type, it soon becomes useless."

Inventors, therefore, have sought to devise rollers which would embody most of the advantages of the various rollers heretofore used, eliminate their principal disadvantages, can be made of any desired consistency and resiliency, will not be affected by inks, acids, or water, will not change shape or harden, shrink, flow, or melt, and will, at the same time, be mechanically strong.

While composition rollers are still used, particularly for half-tone and process color printing, rubber rollers are now generally employed in the large newspaper offices throughout the country. However many problems still must be overcome, such as the hardening of the rubber, the glazing of the surface, and swelling through the action of ink or oil.

The following abstracts of United States patents indicate the different ways proposed in using rubber in printing rollers.

1. Schimmelfennig and Ende, 20,512, June 8, 1858. The usual ink roller of glue and molasses is replaced by one made from either raw or vulcanized rubber. The roller consists of a wood or metal core to which is attached a layer of rubber. The rubber adjacent the core may be hard; while the surface layer may be soft or spongy and cellular.

2. Littleton, 38,113, Apr. 7, 1863. The invention consists in constructing a roller in 2 parts, with rubber bearers and a set screw for adjusting the surface, each end of the roller having a flange, upon which is fastened a prepared rubber covering.

3. Tubesing, 46,736, Mar. 7, 1865. A flexible and elastic form for printing, graining, etc. consists of rubber or a mixture of rubber and gutta percha with a backing of printers' roller composition (glue and molasses).

4. Tucker, 90,702, June 1, 1869. A roller for inking lithographic stones is formed of a metal core surrounded by a rubber coating combined with an outer leather covering.

5. Moulton, 94,631, Sept. 7, 1869. A sponge rubber inking roller has on its external surface a solid rubber skin, either vulcanized or not.

6. Westcott, 110,522, Dec. 27, 1870. An ink roller has a body of sponge, or sponge combined with glue, glycerin, or some other soft or glutinous substance suit-

able for the body of a printers' ink roller, combined with an outer skin of rubber.

7. Spadone, 199,116, Jan. 8, 1878. A printers' inking roller comprises a solid iron core, a vulcanized rubber portion, and an outer glue and molasses composition. The rubber base may be covered with cloth or silk or other material before the composition is put on, to facilitate removing the composition when necessary.

8. Lanham, 216,964, July 1, 1879. A printers' roller consists of a stock having a longitudinally perforated rubber covering.

9. Marler, 218,041, July 29, 1879. The following composition is for printers' rollers: glue, 32 parts; glycerin, 56 parts; sugar, 12 parts; rubber dissolved in naphtha, oil of turpentine, or other suitable solvent, 10 parts.

10. Lanham, 219,102, Sept. 2, 1879. An inking roller for lithographic printing consists of a core having a textile fabric wrapped thereon and supporting throughout its length a seamless rubber cover.

11. Osborne, 277,154, May 8, 1883. An elastic ink roller comprises a rigid shaft and a series of impervious elastic rubber disks provided with internal cavities and an unbroken peripheral surface, and clamping devices holding the disks in close contact with each other, whereby a roller is produced having numerous closed cavities within its body.

12. Campbell, 280,447, July 3, 1883. A printing roller for applying and distributing ink comprises a metal core, a rubber cushion on the core, a textile covering over the cushion, a facing layer of rubber over the covering, an interposed film of varnish, to protect the rubber from the solvents in the ink, and an exterior leather covering.

13. Campbell, 285,011, Sept. 18, 1883. An inking and distributing roller for printing is composed of a cylindrical core, a uniformly thick vulcanized rubber covering, a felt protecting sleeve, and an exterior leather covering.

14. Bingham, 294,436, Mar. 4, 1884. A wetting roller core for lithographic printing comprises a metal core, a cushion of the ordinary roller composition molded on the core, a protective covering of rubber placed over the composition core and drawn down and secured to the core to protect its ends, and an exterior felt covering.

15. Brengel, 327,995, Oct. 13, 1885. A damping roller for lithographic presses is constructed of a metal central body, a rubber tube in contact with the metal, a flannel tube in contact with the rubber, and outer fabric tube.

16. Perry, 630,517, Aug. 8, 1899. A composition for printers' inking rollers follows: crude rubber, 28 parts; whiting, 59 parts; dry lead, 11 parts; sulphur, 2 parts. To the above ingredients are added from 21 to 42 parts of corn-oil, and the whole thoroughly mixed together in one mass; then it is molded into the desired shape and subjected to either a steam or dry heat of not less than 260° F. until vulcanized.

17. Perry, 633,152, Sept. 19, 1899. The roller is of the usual composition from which printers' inking rollers are formed, such as glue and molasses having a jacket of an elastic material composed of crude rubber, 28 parts; whiting, 59 parts; dry lead, 11 parts; sulphur, 2 parts, to which is added from 21 to 42 parts of corn-oil. The compound, formed and molded into the desired shape, is subjected to either a steam or dry heat of the required degree until properly vulcanized.

18. Moreton, 647,146, Apr. 10, 1900. A printers' inking roller is made by applying a layer of rubber in a plastic state to a fluted or roughened mandrel, covering the rubber with textile material, and fixing by adhesive

solution, superimposing a further layer of rubber and vulcanizing into a composite mass, grinding the outer surface to an even circumference, removing the composite tubing from mandrel, placing the tubing in a mold around a central spindle, molding a gelatinous compound between tubing and stock, and retaining the compound within the tube by a cap of metal or other material.

19. Johnson and Marshall, 689,590, Dec. 24, 1901. An inflatable printing roller comprises a supporting bearing shaft or spindle; a cylinder provided with a flexible rubber periphery; a covering of absorbent material for the cylinder; a fluid containing tube coiled or spirally arranged within the cylinder and forming a progressive channel with flexible walls extending around the spindle and from one end toward the other; together with means for inflating the tube.

20. Kling, 710,327, Sept. 30, 1902. A printers' roller has an enlarged body terminating in journals, an elastic casing with its ends carried around the ends of the body, washers enclosing the ends of the casing and serving to prevent liquids from coming in contact with the casing, an outer leather casing enclosing the elastic casing and the washers, and an inner pneumatic casing with ends extended around the roller's body ends. The inner pneumatic casing provides an air chamber which extends on each end of the body of the roller in proximity to the journals of the roller, and an air valve arranged adjacent to the roller journal.

21. Kling, 725,971, Apr. 21, 1903. The invention, an improvement on patent No. 710,327, has for its object so to construct the interior inflatable member that when pressure is exerted on any particular portion thereof, the air will not be driven or forced out of that particular part and crowded into other portions, but will be resisted by the surface of the core in the line of such pressure.

22. Turner, 776,000, Nov. 29, 1904. An inking and damping roller comprises an inflatable tube, an outer cover, and a sheet disposed between the inflatable tube and the outer cover, one longitudinal edge of the sheet overlapping the other longitudinal edge and adapted to slide thereon as the inflatable tube is expanded.

23. Crump, 794,492, July 11, 1905. Inking rollers are made by molding a basic sponge rubber layer on a roller stock, removing the surface of this layer to open the pores, placing the roller stock with its basic layer in a vertical mold, filling the mold with a coating material of ordinary roller composition, progressively removing the air from the pores from the bottom of the mold upwardly, and progressively filling the pores from the bottom of the mold upwardly with the coating material.

24. Staunton, 1,000,634, Aug. 15, 1911. A printers' roller is composed of a vulcanized base composition of pontianak, vegetable oil, and lime, admixed with pre-vulcanized rubber, wool grease, sulphur, and lime, and thereafter vulcanized.

25. Larkin, 1,049,878, Jan. 7, 1913. A printing roller composition is made by dissolving glue or gelatin in glycerin, cooking to a desired degree, adding dextrin and cooking the mass, adding crude rubber dissolved in a suitable solvent, heating the mass, and adding sodium dichromate dissolved in molasses.

26. Crump, 1,141,320, June 1, 1915. A printers' roller is completed by applying a composition, while melted, in layers to the body already thereon, which consists in rotating the body in the presence of the melted composition held against a portion of the circumference of the body, rendering the layer of composition taken by the roller uniform in thickness, and adjusting the relation of the melted composition to the roller as the latter increases in diameter. (*To be concluded*)

Spray Guns

Types for Applying Latex, Flock, and Lacquer

SPRAY guns, or air brushes, are atomizing tools for applying materials such as paints, lacquers, fibers, etc. as decorative or preservative coatings on surfaces of any kind. These tools are of various types, according to the purposes for which they are used and the operating equipment to which they apply.

Like so much other equipment designed for various industries, spray guns are now utilized by manufacturers of rubber goods because the guns not only expedite finishing of painted and lacquered goods, but make possible the use of liquid latex in coatings and the inexpensive production of suede effects on rubber-proofed fabrics. Latex is well suited for spraying and is extensively applied by means of standard spraying apparatus using those nozzle combinations which are most suitable for it.

Since copper or brass affects latex chemically, it is advisable to use a spray head consisting of an aluminum barrel and a stainless metal tip and needle. This equipment is rather extensively used for spraying other materials such as paints, varnishes, and lacquer finishes and is considered the most satisfactory for latex.

Cup Feed Guns

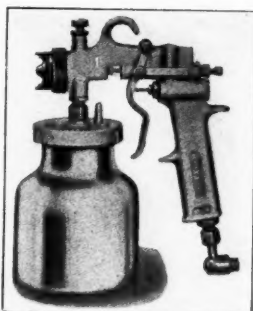
There are 2 general types of spraying equipment: namely, the attached cup feed and the pressure tank feed. Attached cup guns are suitable for spraying small quantities of material at a time. Several guns of this type are grouped in Figure 1. In these forms latex is siphoned from the cup to the outlet of the gun by the suction created at the atomizing nozzle where the spray is produced. Figure 1 *A* represents a production spray gun with one-quart capacity feed cup attachment. In such suction feed cup guns the difference in their size results in a corresponding difference in the volume and speed of the spray produced.

Gun *B* in Figure 1 is usable for suction or pressure tank feed. It is provided with an aluminum container, which with the cover has a bayonet locking device allowing quick release of the cup in changing colors or refilling. Extra containers can be used for different colors or different classes of finishing materials. Each container is furnished with a sealing cover to keep the contents free from dust and prevent evaporation of solvent.

Figure 1 *C* shows a gun with round spray multiple head for concentrated work. It has a siphon cup of one-quart capacity. It will be noted that all suction cup guns have containers of small capacity.



A. DeVilbiss



B. Spraco



C. Paasche

Fig. 1. Cup Feed Guns

Pressure Feed Guns

For large-scale applications of spray finishing resort is had to the separate container or pressure feed tank system. This system is used in heavy application requiring long spraying periods and larger quantities of material. The material is placed in the pressure feed tank of capacities ranging from 2 to 60 gallons, depending upon the user's requirements. The spray gun is connected to the pressure feed tank by means of flexible hose. Latex is forced out of the tank by air pressure to the spray gun, at which point atomization pressure at the nozzle of the spray gun produces the desired spray. The gun is, of course, provided with necessary adjustments by means of which the volume of air and the flow of material are controlled. This construction enables the operator to regulate the speed of the gun and the width of the spray from a small diameter to a wide fan spray.

Several spray guns designed for pressure feed tank operation are pictured in Figure 2. Of these *A* has a 2-finger trigger. The spray is readily adjustable from round to flat by a touch of the forefinger and the thumb of the free hand of the operator. The body and air nozzle are bronze, the fluid nozzle and needle valve of stainless steel, and all other features conform to equally exacting specifications to eliminate chemical effect injurious to the spray fluid. The spray on gun *B* in Figure 2 is regulated by small adjustments from a small-diameter round spray to a wide fan spray. Inasmuch as latex is a comparatively light material, high air pressures are not necessary.

The gun pictured in Figure 2 *C* has an aluminum cup and cover attachable by a bayonet locking device allowing for quick changes. Extra containers can be used for different classes of finishing materials. These containers are equipped with a sealing cover to keep the contents free from dust and loss of solvent by evaporation.

The gun *D* in the pressure-type group is designated as a convertible multiple-head air brush for use with gravity feed and siphon cups or pressure feed tanks. It is convertible into 3 sizes of air brushes by simple change of fluid tip assemblies.

Flock Spray Guns

Extremely fine-cut fibers of cotton, silk, and rayon, designated as flock, are much used to give a velvety surface on paper and fabric. On weather-proofed rubber goods the application of flock simulates the appearance and feel

of suede leather. In this case the flock is sprayed on surfaces rendered tacky by an underlying coat of latex or rubber cement.

Group illustration Figure 3 represents several makes of guns for spraying flock. Of these *A* is simple in construction, easy to operate, and positive in action. The gun body is especially designed for this particular application provided with necessary adjustments to regulate the amount of air properly to agitate the flock or dry material in the container. There is another adjustment for the regulation of the flow of air



A. Binks



B. DeVilbiss



A. Binks



B. DeVilbiss



C. Spraco



D. Paasche

Fig. 3. Flock Guns

necessary to spray the material, and a third adjustment controls the width of spray from a round spray to any desired width of fan spray. This last feature is of special advantage in spraying large flat surfaces.

Flock gun *B* is a very sturdy, dependable unit with all the adjustments for regulating size and form of delivery to produce the spray application required.

Flock gun *C* is a compact, well-balanced unit with an aluminum container of one or 2 quarts capacity with bay-

onet lock for quick replacement. Agitator jets project downward into the container to insure uniform flow of flock through the nozzle. Two adjustments are provided, one controlling the volume of flock delivered, and the other regulating the form of the spray which may be either cone or fan-like.

Figure 3 *D* represents a flock gun mounted upon a container shown in vertical section. The latter reveals the air pipe for agitating the flock.

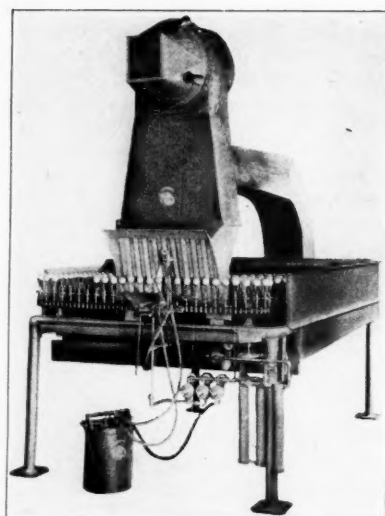


Fig. 4. Golf Ball Painting Machine

Special Spray Equipment

Spray coat finishes are so economical and satisfactory that much special equipment has been designed for special lines of spray work. Two of these for the rubber industry are here illustrated. One relates to painting golf balls, and the other to lacquering rubber shoes. The golf-ball painting plant is pictured in Figure 4, which shows a spindle-chain conveyor automatic unit. It has a capacity of coating 16 balls per minute in 20 minutes drying time or twice that number of balls in half the drying time. This unit includes 2 automatic air brushes with adjustable mounting rod, 320, 3-prong adjustable holders, 14 ball bearing sprockets, air regulators for air brushes, air motored chain conveyor, automatic oiler, drain trough, 16-foot air conditioning unit for air

motored conveyor, 32-foot air conditioning unit for guns and tanks, 6-gallon pressure feed tanks, and fireproof ventilating unit with removable copper collector plates in duct.

The equipment pictured in Figure 5 is designed for varnishing rubber shoes. This machine has adjustable angular arbors and will lacquer shoes in a variety of styles and sizes. The 3 convertible automatically operated air brushes can be

(Continued on page 42)

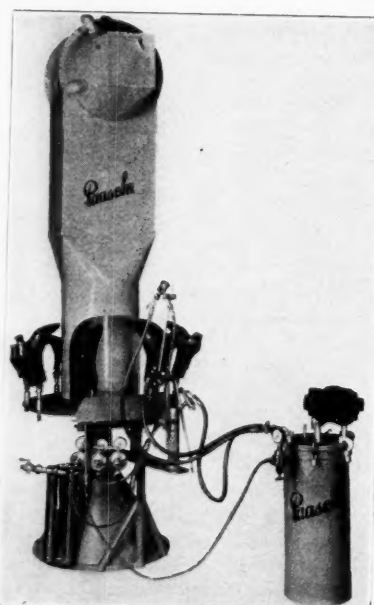


Fig. 5. Footwear Coating Machine

Plantation Acreage-1932¹

THE accompanying tabulation sets out the area planted to rubber, mature and immature, separating large estates and small holdings, in all the rubber-producing countries of the world at December 31, 1932. In reading this table, the following notes describing the courses, scope, and limitations of the statistics should be kept in mind.

Statistics of acreage under rubber are subject to constant revision, and the present table includes all amendments made in the latest published official statistics. Since for some countries the figures for previous years have been revised, the present tabulation is not strictly comparable with that giving the figures for the end of 1931. Thus during 1932 there was an apparent increase of 90,000 acres in the planted area, but the increase was due largely to a revision of certain figures. These will be mentioned in the following notes, the purpose of which is to assist in the reading of the statistics. The conclusion reached is that the total area planted to rubber in the world remained practically unchanged during 1932.

Large Estates and Small Holdings

The division of the total area into large estates and small holdings is intended to show broadly its distribution as between the 2 distinct systems of cultivation—European and native. Actually, the line of demarcation is not clean cut, the definition of large estates varying in different countries. Although this qualification should be borne in mind, it is unlikely that it vitiates substantially

ly the conclusion reached. In Malaya large estates are defined as estates of 100 acres and over. In the N. E. I. the definition is based on method of cultivation irrespective of size. But in practice this definition leads to approximately the same results as if the Malayan definition had been used. In Ceylon the latest official statistics are those published by the Rubber Controller in 1928, and they only distinguish between estates of over and under 10 acres. However the Ceylon Government has furnished the R. G. A. with data which enable the area of estates over 100 acres in the Rubber Controller's figures to be separated from those under 100 acres. These figures have been used as the basis of the Ceylon figures in the table. In India an official total figure has been distributed in the light of the best estimates available. In British North Borneo the official definition is based on methods of cultivation.

In Indo-China there are actually many small holdings, but they are generally cultivated by Europeans according to estate methods. This area is accordingly included under large estates irrespective of size of units. In Siam the acreage is entirely cultivated on native methods, while in other countries the division is largely an estimate based on the work of private investigators.

Mature and Immature Rubber

Where official figures of the division of the planted area into mature and immature rubber are available these have been adopted. In other cases mature rubber has been defined as rubber aged 6 years or over. It will be seen that the expression mature is used in the sense

¹ Bull. Rubber Growers' Assocn., Feb., 1934, pp. 73-89.

COUNTRY.	LARGE ESTATES.			SMALL HOLDINGS.			TOTAL.		
	Mature Area.	Immature Area.	Total Area Planted.	Mature Area.	Immature Area.	Total Area Planted.	Mature Area.	Immature Area.	Total Area Planted.
MALAYA—									
S.S.	191,000	24,000	215,000	125,000	1,000	126,000	316,000	25,000	341,000
F.M.S.	785,000	159,000	944,000	526,000	38,000	564,000	1,311,000	197,000	1,508,000
U.M.S.	517,000	181,000	698,000	420,000	166,000	586,000	937,000	347,000	1,284,000
Total	1,493,000	364,000	1,857,000	1,071,000	205,000	1,276,000	2,564,000	569,000	3,133,000
N.E.I.—									
Java	410,000	141,000	551,000	12,000	8,000	20,000	422,000	149,000	571,000
Sumatra's E. Coast	415,000	213,000	628,000	1,400,000	400,000	1,800,000	1,971,000	717,000	2,688,000
Other Outer Possessions	156,000	104,000	260,000						
Total	981,000	458,000	1,439,000	1,412,000	408,000	1,820,000	2,393,000	866,000	3,259,000
CEYLON	342,000	20,000	362,000	178,000	6,000	184,000	520,000	26,000	546,000
INDIA & BURMA ..	84,000	41,000	125,000	44,000	11,000	55,000	128,000	52,000	180,000
BRITISH BORNEO—									
Brit. North Borneo	61,000	11,000	72,000	19,000	23,000	42,000	80,000	34,000	114,000
Sarawak	7,000	1,000	8,000	158,000	99,000	257,000	165,000	100,000	265,000
Brunei & Labuan	3,000	1,000	4,000	6,000	2,000	8,000	9,000	3,000	12,000
Total	71,000	13,000	84,000	183,000	124,000	307,000	254,000	137,000	391,000
FRENCH INDO-CHINA	137,000	174,000	311,000	—	—	—	137,000	174,000	311,000
SIAM	—	—	—	85,000	65,000	150,000	85,000	65,000	150,000
OTHER COUNTRIES ..	50,000	25,000	75,000	—	—	—	50,000	25,000	75,000
GRAND TOTAL	3,158,000	1,095,000	4,253,000	2,973,000	819,000	3,792,000	6,131,000	1,914,000	8,045,000

Bull. Rubber Growers' Assocn.

Area under Plantation by Country and Size of Estate, December 31, 1932

"physically tappable," and not in any sense of the area actually tapped during 1933.

Notes on Individual Countries

MALAYA. Statistics for large estates in the S. S. and F. M. S. are probably as accurate as it is possible to make them. The total area of large estates in the U. M. S. and of small holdings in the F. M. S. and S. S. is also fairly reliable, though the immature acreage is open to some doubt. Small holdings in the U. M. S. are open to a wider margin of error.

A comparison of the present figures for Malaya with those of February, 1933, reveals an increase of 60,000 acres during 1932. Actually, it is officially stated that new plantings in Malaya during 1932 amounted to 5,855 acres, principally in the Federated Malay States and Johore. It is added that there are adjustments in the figures for Johore resulting in a net increase in that state of 53,934 acres, chiefly due to the discovery of areas of small holdings planted without authority and previously unrecorded.

CEYLON. These figures are based on data collected by the Ceylon Rubber Controller during the restriction period, and were published in 1928. They are so much at variance with the results of the official censuses of 1919 and 1921 as to make a new census urgently necessary.

INDIA AND BURMA. During 1932, 8,057 acres were abandoned and 3,940 acres newly planted with rubber. After a revision of the previous year's figure, the total planted area at December 31, 1932, stands at 180,000 acres. Some slight adjustment has also been made to the distribution of the area between mature and immature rubber.

FRENCH INDO-CHINA. The area planted to rubber in French Indo-China is now placed at 311,000 acres, as against 280,000 officially estimated for the previous year. The increase is due to a revision in the figures. For the purpose of the government scheme of assistance to planters by loans for the upkeep of immature rubber, the acreage under rubber by year of planting is reported to the government. The estimates of total acreage under rubber in the country are presumably based on these reports, but it is not known how carefully they are checked, and whether they have any valid claim to accuracy. 87,000 acres, or 28% of the total planted area are stated to be grafted.

SIAM. The figures quoted are estimates with an official basis, but their accuracy is doubtful.

"OTHER COUNTRIES." The total planted area remained unchanged during 1932, but it is believed that less of it is mature than was stated last year, and the distribution of the acreage according to maturity has, therefore, been revised.

All-Weather Coats

(Continued from page 36)

See the fascinating shoulders and necklines on the Ca-bochon and Elsa numbers. Observe, please, the arrow buttons and pocket effects that enhance the latter coat. Notice how many of the models are cuffless, but those that have cuffs also merit attention.

Capes, having a charm not to be denied, are ever popular. A fetching model is of tiny blue and white checked cotton well fitted about the shoulders with comfortable armhole slits and tricky metal buttons.

The more one sees of these coats the more she realizes she need never be dowdy in stormy or uncertain weather. Neither rain nor snow nor sleet nor ice can keep her from being smartly attired, thanks to U. S. Rubber and these Paris sportswear coats.

Spray Guns

(Continued from page 40)

quickly adjusted to cover from the smallest to the largest shoe without any wastage whatsoever of time or material.

The original hand-brush method of shoe varnishing was largely displaced long ago by machine dipping. While the latter will doubtless continue in vogue for general production, its limitations offer a favorable opportunity for the spraying method with its facility for rapidly and accurately working out fine details of coating that otherwise would require the use of skilled hand work.

The spray gun will be found as useful a tool in the rubber industry as in any other where the finish on goods is an important feature.

Para-Graphs

CATALPO FOR INNER TUBES. The uniform and minute particle size of Catalpo clay makes a very good tubing stock well adapted for tubed and circular molded inner tubes. This material is especially advantageous for truck tubes where aging and heat resistance are of paramount importance.

CONTINUOUS SHOE VULCANIZATION. A German system of continuous vulcanization of rubber footwear comprises a vulcanizer of 3 communicating pressure compartments, in the first of which a car of shoes is preheated to curing temperature. Passing into the second, the goods are completely cured by the time they enter the third compartment where they are held until the pressure and temperature conditions there become the same as the outer atmosphere. In practice a group of 3 or 4 vulcanizers is operated in conjunction.

PIPE LINE PROTECTION. A superior protective coating for underground metal pipes is found to result from a mixture of rubber and artificial resin in solution. A homogeneous solution of these ingredients is secured by first mixing into the resin solution a finely divided filler like China clay and then adding the rubber dissolved in tar oil. Such a mixture covers and adheres well to metal piping.

SURFACE ORNAMENTATION. Tiling may be decorated in colors and designs by transfers made by deposits of colored rubber on cloth or paper from solutions or dispersions, by spraying, printing, painting, or dipping. The sheet bearing the design to be transferred is laid face up in a tile mold cavity, backed with rubber tile compound. The cured tile bears the design transferred from the mold when the transfer sheet is removed.

Resilient Expansion Joint Fillers¹

FOR many years premolded fillers have been used in transverse expansion joints in concrete pavements to permit linear expansion of the concrete. The most widely used type has been a plastic compound consisting of bitumen and finely ground mineral matter between surfaces of felt paper. With linear expansion of the concrete, the bituminous filler is displaced and forced upward above the surface of the pavement. Owing to the cost of maintenance efforts have been directed toward the development of a resilient expansion joint which would absorb expansion of the concrete without appreciable extrusion of the filler and also expand upon subsequent contraction of the concrete, thus keeping the joint filled.

The following samples of constructions were included in the tests.

Samples 1 and 2. Sponge rubber fillers with nominal thicknesses of $\frac{1}{2}$ - and one inch, respectively. The sponge rubber is placed between protective sheets of asphalt treated felt. One edge of the filler is sealed with rubber to make a waterproof surface.

Sample 3. The usual type of preformed asphaltic filler with felt sides. Nominal thickness, one inch.

Samples 4 and 5. Sponge rubber fillers with nominal thicknesses of $\frac{1}{2}$ - and $\frac{3}{4}$ -inch. The rubber appears to be of a much more open texture at the center than at either side of the filler. One edge of the $\frac{1}{2}$ -inch filler and both edges of the $\frac{3}{4}$ -inch filler are sealed with rubber. Both sides are protected with asphalt coated felt.

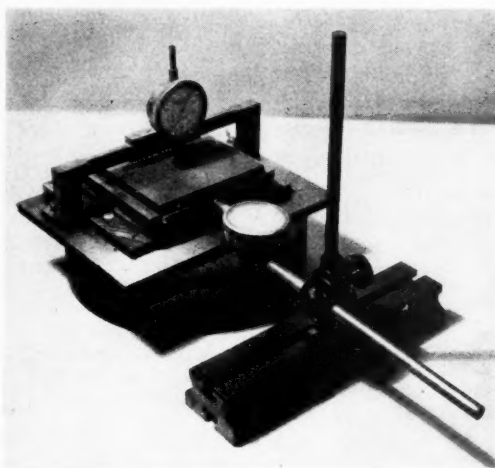
Sample 6. Sponge rubber filler, $\frac{1}{2}$ -inch thick. The rubber, of uniform texture, is protected by felt sides. The edges are not sealed.

Sample 7. Burlap backed sponge rubber filler with a nominal thickness of $\frac{1}{2}$ -inch. The rubber is of uniform texture. The edges are not sealed.

Samples 8 and 9. Vegetable (cane) fiber, coated and impregnated with an asphaltic compound. No protective backing is used. The samples have nominal thicknesses of $\frac{1}{2}$ - and one inch.

Samples 10 and 11. Compounds of asphalt and fiber with particles of vulcanized rubber, some of which are $\frac{3}{4}$ -inch in length. The surface of the joint is very irregular. The samples have nominal thicknesses of $\frac{1}{2}$ - and one inch.

Sample 12. A composition of granulated cork bound



Rubber Roads Apparatus Used in Extrusion Test—
3 Sides of the Specimen Are Restrained

with phenol formaldehyde resin. The material, of uniform texture, has a nominal thickness of one inch.

Sample 13. A compound asphalt and finely ground vulcanized rubber, with nominal thickness of $\frac{1}{2}$ -inch.

It must be said that the perfect expansion filler is yet to be developed. None of the materials tested show all the qualities desired in a filler. So far as resiliency is concerned the majority of the materials tested are considerably superior to the plastic asphaltic fillers which have been used for many years.

Of the materials tested, sponge rubber and cork fillers appear to combine to the highest degree the features of resiliency, durability, and resist-

ance to extrusion which are considered desirable in expansion joint fillers. The chief question regarding the sponge rubber filler is the probable service life of the material. One year's exposure to the weather failed to change the characteristics of the sponge rubber.

The cane or vegetable fiber filler possesses the best resistance to extrusion of any material included in this investigation. It is not very resilient and cannot be considered as efficient from this point of view as either sponge rubber or cork. The fiber joint is easily damaged by frost, but shows no loss of resiliency.

Information obtained from various sources indicates that changes in length of as much as $\frac{1}{4}$ -inch may be expected in a 40- to 50-foot concrete slab due to variations in temperature and moisture content. These tests indicate the desirability of using one inch of cork or sponge rubber filler for each 40- to 50-foot slab if it is desired to make allowance for the maximum expansion and have the joints tightly filled with desirable material.

The asphalt rubber fillers show relatively little resiliency and have large amounts of extrusion; therefore, they are little better than the plastic asphaltic joint fillers.

The following conclusions appear to be warranted:

1. Considering the essential features of the resilient types of filler described in this report, the different types may be rated as follows: (a) sponge rubber and cork; (b) fiber; (c) asphalt rubber.

2. The different samples of sponge rubber filler exhibit a considerable range in physical characteristics, which warrants careful investigation of any particular material prior to use.

3. A compression test with 3 edges restrained is believed suitable for testing resilient expansion joint fillers. Measurements of the recovery, extrusion, and applied load can be made in a single test.

¹ From "Laboratory Tests of Resilient Expansion Joint Fillers." Reported by D. O. Woolf and D. G. Runner. *Public Roads*, Mar., 1934, pp. 17-25.

EDITORIALS

Restriction Accomplished

REPRESENTATIVES of the Rubber Growers' Association, Inc. (British), the Internationale Vereeniging De Rubber-En Andere Cultures In Nederlandsch-Indie (Dutch), the Union des Planteurs de Caoutchouc en Indo-Chine (French), and delegates of the governments of Sarawak and of Siam signed an agreement on April 28 for regulating and restricting rubber planting and export. The agreement is to run for a minimum period of 4½ years, commencing June 1, 1934, and terminating December 31, 1938.

The agreement proposes to regulate the production and export of rubber in and from producing countries, to reduce world stocks to normalcy, and to adjust supply to demand in an orderly manner and to maintain a fair price level which will be remunerative to producers.

The regulation is effective in: Straits Settlements, Federated Malay States, Unfederated Malay States, Labuan, and Brunei, collectively known as Malaya, The Dutch East Indies, Ceylon, India, including Burma, French Indo-China, State of North Borneo, Sarawak, and Siam. Basic production quotas have been established according to the producers' agreement among the respective territories.

The scheme has several advantages over the Stevenson plan of 1922-28, which failed to maintain fair prices and to secure sufficient supplies to the consumers. The present agreement does not state how the native Dutch producers are to be controlled, or what the price of plantation rubber may be. It is, however, a very comprehensive plan and provides a flexibility that it is hoped will be used to benefit the consumer, the United States being one of the largest.

Regarding the percentage of quotas allowed to be exported, a member of the Rubber Growers' Association stated:¹

"Broadly speaking the position is this. The current rate of production is about 1,000,000 tons per annum or a little more, and the current rate of consumption is about 900,000 . . . (taking the year as a whole) . . . Production we put at 1,050,000 tons and the difference you get by subtracting the one from the other is 150,000 tons. The other factor of course is stocks. The effective stocks—that is, other than afloat and in producing countries—are 456,000 tons. A normal figure for stocks at the current rate of absorption would be about 225,000 tons, so you get a surplus stock of about 230,000 tons.

. . . You have got an estimated excess production of 150,000 tons and you have got an estimated excess stock of 230,000 tons and the business of the regulation plan is to deal with these—that is, your 'burdensome surpluses'. You have only got to make another calculation which leads you to this conclusion—namely, that the rate of limitation need not be very heavy to bring about equilibrium between supply and demand, and, at the same time, cut into these excessive stocks. Probably on these figures a reduction of something like 25% would be sufficient to accomplish both purposes—that is, reduce production to such a rate in relation to absorption that stocks will gradually be diminished. That 25% reduction is considerably less than was contemplated at one time."

In the trade, opinions of the scheme were generally favorable owing to the fact that rumors of restriction had been the cause of advanced prices and that the market would decline rapidly unless restriction became a fact. Therefore when the restriction agreement was definitely announced the New York market did not skyrocket, but advanced about 2¢ a pound.

Labor Unrest

DURING the past month there have been recurrences of industrial strikes and severe labor riots which clearly indicate a growing unrest among the workers of the United States. In Akron, where in the past, labor difficulties were practically unknown, many companies now realize that labor is not satisfied with the working out of collective bargaining through Section 7-A of the Recovery Act, and the government's automobile settlement. Labor appears to have lost confidence in government departments as agencies for adjusting disputes, and many large groups of industrial workers are talking of strikes and avoiding labor board meetings.

On the other hand many companies are inspired by the automobile settlement to encourage company unions and decline to arbitrate labor disputes on any terms other than those of the March 25 settlement.

It is clearly the duty of the Government to stop these strikes and make arbitration compulsory.

Despite all this unrest employment is increasing. The total number of unemployed workers in April, 1934, was 7,907,000, which is a decline of 114,000 or 1.4% from the March total and a decline of 5,296,000 or 40.1% compared with March, 1933, when unemployment was highest.

¹ Special Circular No. 3,528. Rubber News Letter, Department of Commerce, Washington, D. C.

What the Rubber Chemists Are Doing

Adhesive Latex¹

IN THE course of an investigation on the oxidation products of dry rubber and of latex the reaction of latex with hydrogen peroxide was studied. One result of this work was that a latex possessing distinctive adhesive or sticky qualities was prepared that may prove of commercial interest. It is proposed, for the sake of brevity, to refer to this product as "sticky" latex.

By allowing hydrogen peroxide to react with latex Bloomfield and Farmer² obtained a series of more or less oxidized preparations of different plasticity values. The most plastic of the series, which is the subject of this report, is prepared as follows: 60% concentrated latex (by centrifugation) is diluted to a concentration of 45% with water and stabilized by the addition of a small quantity of casein dissolved in dilute ammonia (at the rate of 1 g. casein per 100 cc. of the original concentrated latex). The latex mix is then freed of ammonia as rapidly as possible by drawing air through it. The next step is to place 150 cc. of the ammonia-free latex in a large vessel, as considerable frothing occurs, together with 12.5 cc. of 20-volume hydrogen peroxide. The liquid is then slowly but efficiently stirred and warmed on a steam bath until frothing subsides. This takes 20 to 30 minutes. The whole is then cooled, and a further 12.5 cc. of the 20-volume peroxide added. Finally the mix is heated for 3 to 4 hours on the steam bath, with constant stirring. If any tendency to clotting appears, a little dilute ammonia should be added. After cooling, the oxidized latex is strained, and a small quantity of ammonia added as a preservative.

Characteristics of and Tests on Sticky Latex

The apparent advantage of "sticky" latex arose in connection with the problem of making a good joint between leather and a certain type of rubbered fabric. The latter was coated with rubber cement, according to the well-known practice, and the leather treated with latex. Using "ordinary" 36% latex, 60% concentrated by centrifugation latex, ditto diluted to 36%, 70% con-

centrated by evaporation latex, and ditto diluted to 36%, the results were not satisfactory. "Sticky" latex was then tried with distinctly better results. The process of handling was facilitated, and a joint obtained which could not be broken without tearing the fabric and which resisted the action of fresh and sea-water acting over a period of several days. When using a self-curing rubber cement on the fabric, it was found that whereas the joints made with the standard varieties of latex mentioned tended to open up unless constant pressure was applied prior to the completion of the vulcanization stage, this undesirable effect did not take place when "sticky" latex was employed. The readiness with which surfaces treated with "sticky" latex adhere to one another, and the fact that prolonged pressure is not necessary to obtain good results, should be of considerable practical importance. Another advantage is that if a piece of material has been applied in a wrong position, the broken joint may readily be re-made when "sticky" latex has been used.

To obtain quantitative data on the relative adhesion of joints made with sticky and ordinary latices shear tests were made using a Schopper machine to apply a separating force along the line of the joint and stripping tests by using a light spring balance. The results obtained were roughly confirmed by hand tests which, although not directly comparable with the quantitative data, afforded evidence as regards ease of manipulation and stickiness in the popular sense.

Test pieces in one-inch wide strips overlapping one inch were made of the following combinations: rubbered canvas to rubbered canvas; leather to leather; unrubbered canvas to unrubbered canvas; leather to rubber; leather to unrubbered canvas; and rubber to unrubbered canvas. The latices used in the tests were sticky latex; normal ammonia preserved latex; 60% latex concentrated by centrifugation; and 70% evaporated stabilized latex. In each case the dry rubber content was adjusted to 36% before use.

A striking feature of the tests was the regularity of the results obtained with the sticky latex specimens compared with those obtained with joints made with the other materials. In the

shear tests the base material broke in every case except in those of leather to rubber where the joint broke in each test.

Comparing the other adhesives, a break of the base material occurred in 20 cases out of a total of 24 with the sticky latex. This feature was observed in only 11 cases with normal latex and in 3 cases with centrifuged latex.

In the stripping tests the differences observed were not so marked, but the regularity of the sticky latex was noticeable and distinctly higher in the case of leather to unrubbered canvas. In leather to leather tests the figures for normal and centrifuged latex were higher. This condition appears to be accounted for by the fact that the strength of the actual rubber film is obviously greater in the normal latex and centrifuged latex, and that under conditions requiring the actual break of the rubber film these latter give better results. This is of little moment for most classes of work, where ease of manipulation and actual stickiness and the other features referred to above are of major importance.

[The above article is the third in the series entitled "Researches on Modified Rubber," conducted for the R. G. A.]

Amberex

Amberex is a new product which does not belong in the class of white or brown factice, but which behaves toward accelerators like brown factice. Amber in color, it has low tinting strength and has found favor in light pastel shades of stock containing ultra-accelerators. With certain accelerators it has been found to increase the rate of cure.

Organic Rubber Colors

When utilizing organic colors in rubber work, the compounder should be certain that the colors selected do not change tone in any type of cure. Also any color is unsuited for rubber work that will "bleed," in other words, that can be discharged by the solvent action of the liquids used in connection with the colored article. These difficulties have been successfully overcome in lines of perfected organic rubber colors now available.

¹ Abstracted from a report by P. Schidrowitz in association with G. F. Bloomfield and E. H. Farmer in the course of an investigation undertaken on behalf of the Technical Research and Development of New Uses Committee. *Bull. Rubber Growers' Assn.*, Mar., 1934, pp. 116-19.
² Imperial College of Science and Technology, South Kensington, England.

A. C. S. Rubber Division Meetings

Akron Group

THE Akron Group, Rubber Division, A. C. S., at its meeting April 30, 1934, elected officers for the ensuing year as follows: C. A. Carlton, development manager, Seiberling Rubber Co., Akron, O., chairman; A. Brill, chief chemist, Republic Rubber Co., Youngstown, O., vice chairman; and H. A. Hoffman, du Pont representative in the Akron district, secretary-treasurer.

New York Group

THE spring meeting of the New York Group, Rubber Division, A. C. S., held May 18 at the clubrooms of the Building Trades Employers Association, was attended by about 100 members and guests. Following the usual dinner, Walter Grote entertained the chemists with a brief exhibition of his baffling tricks with cards.

The first paper of the evening, "Estate and Native Rubber Contrasted," was read by H. W. Whitford, of the Rubber Manufacturers Association, Inc., well-known authority on rubber planting conditions in the Far East. He contrasted the greater yield under Asiatic ownership with cover-crop soil conservation and far greater number of trees per acre with the clean cultivation method formerly practiced on European owned estates.

The semi-forest method with soil protecting undergrowth now practiced will extend the life of European plantations to 50 years instead of to 30 years under the clean cultivation plan.

S. W. Nourse, an expert in lantern slide making, gave a brief practical talk on the subject, emphasizing the essentials of sharpness of detail and lettering in the preparation of slides.

Lawrence A. Hawkins, of the research laboratory, General Electric Co., discussed the experimental methods employed to study the fundamental laws of physics and their applications in science and technology.

Outing

The New York Group will hold an old-time all-day outing at Semler's Park, Grant City, Staten Island, N. Y., on June 30. A full program of sport events has been planned, with luncheon at noon and dinner at night, and beer all day.

The diversions will include golf, swimming, baseball, horseshoe pitching, card games, novelty races, and fly casting contests; in all of which winners will be awarded prizes.

Grant City was selected for the outing because of its accessibility from New York, Brooklyn, and points in northern Jersey as indicated on the accompanying map. It can be reached by trolley in 15 minutes from St. George, terminus of the Battery ferry.

Tickets including all features are obtainable at \$3.50 per person from Bruce



Map Showing Location of Grant City

Silver, New Jersey Zinc Co., 160 Front St., New York, N. Y. Early application for tickets is especially desired by the committee to facilitate arrangements.

Boston Group

THE spring meeting of the Boston Group, Rubber Division, A. C. S., will be held at Hotel Kenmore, Kenmore Square, Boston, Mass., June 8. An exhibit of samples will be on view at 5:30 p. m. Dinner will be served at 6:30 p. m.

A series of 10-minute papers on the use of latex in the manufacture of dipped goods, sealing compositions, coated fabrics, insulated wire, rubber footwear, brake lining, impregnated cord, shoe cements, rubber thread, rug backing, inner tubes, and impregnated fibers will be presented by men well versed in the practical operation of these processes; among them are: Charles R. Boggs, Simplex Wire & Cable Co.; J. B. Crockett, Heveatex Corp.; Bradley Dewey, Dewey & Almy Chemical Co.; Harry J. Elwell, Vultex Chemical Co.; Willis A. Gibbons, United States Rubber Co.; and L. H. L'Hollier, Hood Rubber Co.

Tickets for the meeting at \$1.75 per person can be reserved by addressing J. J. Sindler, Converse Rubber Co., Malden, Mass.

New Chairman

THOMAS MIDGLEY, JR., Worthington, O., has been elected chairman of the board of the American Chemical Society. He is vice president of the Ethyl Gasoline Corp. and has been an A. C. S. director since 1931.

Colloid Chemistry Symposium

The Eleventh Colloid Chemistry Symposium will be held at Madison, Wis., June 14 to 16, 1934. The program includes a paper, "Cold Vulcanization of Rubber," by P. A. Miller and W. D. Bancroft.

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SOME PROPERTIES OF CARBON BLACK. IV. W. B. Wiegand and J. W. Snyder, *Ind. Eng. Chem.*, Apr., 1934, pp. 413-19.

SWELLING HEAT OF RUBBER WITH REFERENCE TO ITS PREVIOUS HISTORY AND THE NATURE OF THE SWELLING AGENTS. I. L. Hock and H. Schmidt, *Kautschuk*, Mar., 1934, pp. 33-35; Apr., pp. 49-51.

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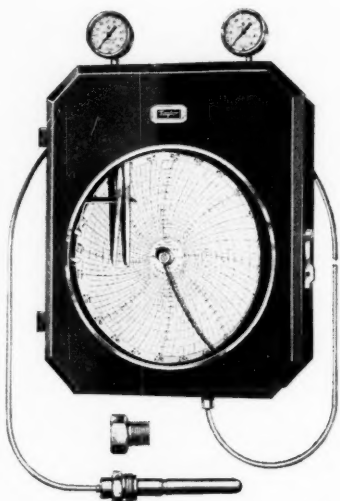
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New Machines and Appliances



Taylor Fulscope Regulator

Recording Temperature Regulator

ONE of the major difficulties in solving control problems has been the inability to secure and maintain either throttling or on-and-off control when desired. The difficulty has been due to the limited number of fixed "sensitivity" adjustments for balancing regulator performance against the time lag that occurs in the apparatus which is under control.

Temperature or pressure regulators are readily adaptable to applications requiring a different temperature or pressure range by substituting a tube system and chart with the required range. It is equally easy for the operator to convert a temperature instrument into a pressure instrument, or vice versa. Taylor Instrument Cos., Rochester, N. Y.

Hydraulic Bale Cutter

THE 4KB crude rubber bale cutter was originally designed to operate pneumatically. The efficiency of this machine has been greatly increased by a recent improvement whereby its operation is effected by hydraulic power as well as pneumatic.

A new addition to the Black Rock family is the small-type, portable bale cutter 4KBH. It is self contained and hydraulically operated.

Calender of German Design

THE 4-roll calender shown in the illustration is up-to-date in its method of operation and output as well as in construction, and it will meet pres-

ent high production requirements in all respects.

Built especially for the manufacture of tires, the calender is also suitable for all other branches of rubber manufacture. Since the rolls work with even motion or with friction action, sheets can be rolled out or fabrics friction coated on the machine. Cord tire fabrics can be coated on both sides in a single operation on this calender. For this purpose a press-on roll is provided at the back of the machine which may be heated or cooled and is driven by compressed air.

The rolls are adjusted by a special driving motor controlled by a press-button switch. For making close, fine adjustments is a special arrangement for hand operation, the advantage being that the adjustment of the central opening takes place independently of the upper one.

The calender is driven by a motor which can be started at low speed and increased to the limit of 50 r.p.m., according to requirement.

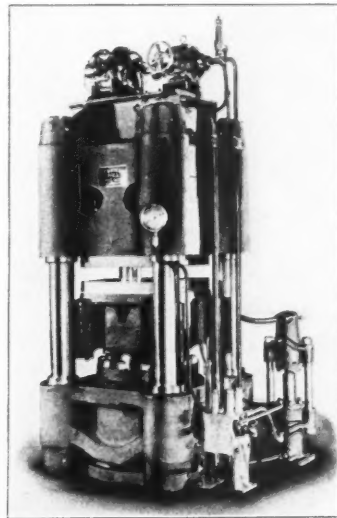
All gears running in oil baths have Sykes toothings. The roll bearings are pressure lubricated; while the rolls have special oil guards. They are cooled by water and heated by steam, which makes it possible to maintain proper roll temperature without difficulty.

The calender, the motor drive, and the actuating parts of the winder and cooling drum are mounted on the same base plate. The lower part of the calender is below the floor level so that the floor can be laid over the drive, thus reducing to a minimum the work-

ing space for the calender. Berger & Co., G.m.b.H., Berg Gladbach b. Köln, Germany.

1,000-Ton Press to Make Rubber Printing Plates

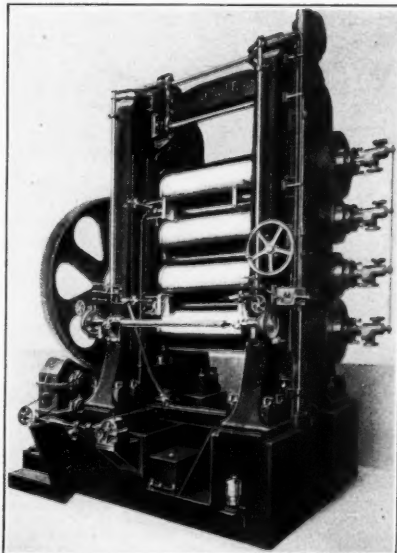
THE novel press equipment pictured was designed and built for the manufacture of rubber printing plates, which are coming more and more into use for special printing work. It is obvious that an extremely rigid press capable of a wide power and temperature range is required to insure faithful reproduction of the original which often has only hair line designs. The press illustrated meets these requirements. It is capable of operating between 100 and 1,000 tons capacity, and its extremely rigid construction limits the deflection even under a maximum load to 0.001-



Wood Hydraulic Die-Sinking and Vulcanizing Press

inch. The 24- by 30-inch hot plates are equipped with electric heating units, permitting perfect temperature control for die-sinking and vulcanizing.

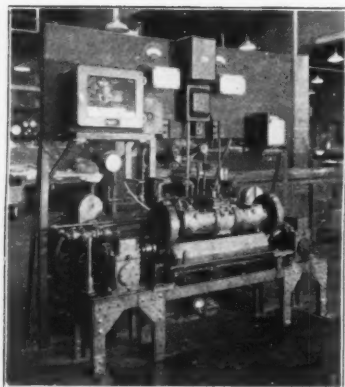
The pressure fluid is furnished by a variable pressure rotary piston pump, direct connected to an electric motor. Both are mounted on a welded steel construction suction tank, located on top of the press. Up to 450 tons capacity the pump pressure is sufficient for press operation. Higher pressures are obtained by means of the hydraulic intensifier, located on one side of the press. A spindle-type operating valve with single hand lever controls the entire press operation. R. D. Wood & Co., 400 Chestnut St., Philadelphia, Pa.



Berger 4-Roll Calender



Day Ro-Ball Screen



Schiller Internal Mixer

Laboratory Mixer for Research Work

IN THE laboratory of one of the large Akron rubber plants is installed for research purposes the internal mixer here pictured. The outstanding feature of its construction is the twin motor drive, front and rear blades being driven independently through speed reducers by 2, 3 h.p. d.c. motors with separate variable speed controls. This arrangement permits of individual variation of mixing blade speeds and, consequently, of wide variation in the ratio of front blade to rear blade speed. It is now possible to study the effect of blade speed ratio variation on the time and power required to obtain a given degree of dispersion.

In capacity and other characteristics this machine is similar to the standard mixer with fixed blade speed ratio. The mixing blades are interchangeable; and when the heavy masticator blade designed for breaking down and compounding is used, the capacity of the mixer is about 1,500 cc. Experience with this standard mixer in rubber research laboratories has shown that the results obtained correspond closely to those obtained with production equipment.

The illustration shows a panel over the machine carrying control and recording instruments for power, blade speed, and batch and jacket temperatures. Schiller Engineering Co., 7050 Chatfield Ave., Detroit, Mich.

Stabilized Gyrating Screen Box

THE gyrating screen pictured, while making clean, accurate separations of the most difficult materials, provides a maximum screening capacity per square foot of screening area. This is made

possible by the gyrating motion of the screen box, the slight inclination of the screen, and the action of the rebounding balls, which causes the material to travel toward the discharge end with a stratifying action, forcing the fine particles to the screen surface. The coarse particles float along on top to the end of the screen where they are tailed over.

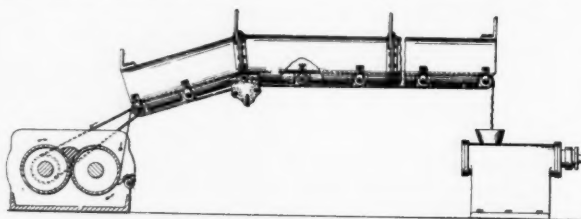
The circular motion of the screen head, together with the reciprocal motion of the tail end, sets up 2 unequal forces. In the smaller Ro-Ball screens these unbalanced forces are offset through vertical mounting of the motor and a balance weight in the drive head. In the larger units the 2 out-of-balance forces are compensated through a stabilizer arm operating in the drive head casting. This stabilizer operates opposite to the stroke of the screen box and develops a variable force equal, but opposite in direction to the variable out-of-balance forces set up throughout the cycle of the screen box, thus maintaining a balanced shaft in every position. The J. H. Day Co., Cincinnati, O.

Continuous Feeding from Mill to Tuber

VARIOUS means are resorted to for the purpose of supplying warm stock to tubing machines. Such a supply is important for securing from the tuber the most efficient operation as regards both amount and excellence of product.

A patented apparatus designed for continuously feeding warm stock from mill to tuber is indicated in the illustration.¹ At the warming mill an adjustable knife is arranged to cut narrow strips of warm stock continuously from the layer around one of the rolls. The first end of this strip is laid by the operator on an endless belt conveyer which runs through a heat insulated metallic conduit, from the farther end of which the strip descends into the feed hopper of the tuber. The conveyer is operated by chain and sprocket connection driven from one of the mill rolls.

¹ U. S. Patent No. 1,908,564, May 9, 1933.



Continuous Tubing Machine Feed

Electrically Controlled Automatic Timer

THE automatic timer pictured, owing to the adaptability of its connections and the fact that all of its operations can be controlled electrically, lends itself to a multitude of automatic and remote control applications, for example, that of the vulcanization of rubber.

The timing element consists of a Telechron motor, self-starting and synchronous. It eliminates all winding, regulating, and oiling. The mechanism is guarded against injury by auxiliary contacts, which prevent the operating pointer from running "off-scale" at any time.

The motor of the timer drives a differential gear system, one side of which can be "locked" by an electromagnetic clutch. The other side of the differential mechanism is geared to the operating pointer. When the "clutch coil" is energized, the timing motor drives the operating pointer up the scale.

When the operating pointer reaches the point on the scale where the adjustable contacts have been set, it closes (or opens) these contacts. The operating pointer keeps these contacts closed (or open) until the "clutch-coil" circuit has been deenergized. When the "clutch-coil" circuit is deenergized, the operating pointer is reset to zero by a spring and is then ready to repeat its timing cycle. The time required for the pointer to reset to zero varies from one to 3 seconds, depending upon the time scale that is used. This device is manufactured by General Electric Co., Schenectady, N. Y.



Type TSA-10 Automatic Timer

New Goods and Specialties



Shoe with Long Game Permanent Cleats

All-Rubber Cleats for Sport Shoes

THE use of rubber, because of its sterling qualities, in the sports world is ever increasing. One of its more recent adaptations is as regulation cleats, permanent or detachable, for any type of shoe, new or old, sports or street. These football cleats are made in several models; for soccer or soft ball; for good turf; for long wear; for muddy fields; and for soft grounds.

Many advantages are claimed for this product. Low in cost, it is long lasting owing to its extraordinarily tough composition. It is easy to attach. This cleat makes for comfort since the large base prevents stone bruises. Furthermore, no metal can ever become exposed even after long wear, and nails can never be driven into the feet. Light, but tough, this all-rubber cleat is rust- and waterproof. Besides it can't be kicked off. The shoe remains flexible, for each cleat is an individual item. The absence of metal and projecting nails prevents injury to opponents. The cleat was designed by a noted college and professional football player, Edward C. ("Dutch") Sternaman, 2656 Diversey Blvd., Chicago, Ill.

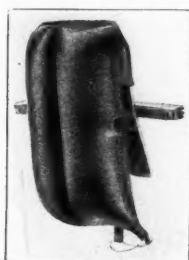
Camping Equipment

METZELER GUMMIWERKE, A.G., München, 2BS, Germany, offers many rubber products for outdoor use. The firm's rubberized tops for folding boats are of different weights, according to the type of boat for which they are destined. For racing boats appear single-ply, tear resisting fabrics rubberized on both sides. For boats to take along on trips and tours, stouter tops are provided of 2- and 3-ply fabric, also rubberized on both sides; top and bottom fabrics are of high-grade muslin, and the core linen. Improved methods have enabled Metzeler to produce tops with a rubber surface perfectly smooth and free from microporosity.

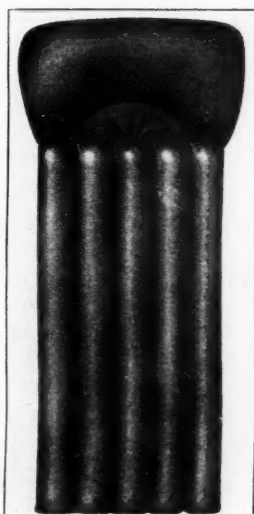
To ease the back and the shoulders of the folding-boat enthusiast this

manufacturer has designed a red rubber inflatable cushion with a semi-circular pocket on one side to permit it to be slipped over the back of the seat. Loops are arranged on either side for a belt when the cushion becomes a life preserver.

The company's latest novelty for travelers and campers is an inflatable



Canoe Cushion



Inflated Bed of German Design

bed consisting of several individual rubber tubes parallel to each other and enclosed in a stout green fabric cover. The single tubes are arranged in the cover so that they cannot get out of place in a deflated state. The space in the cushion is so divided by cells as to insure even distribution of air and prevent rocking of the reclining person. Comfort is doubly guaranteed by the conformation of the shoulder parts to the build of the human body. The tubes are largely protected from damage by thorns, pointed branches, etc., by the stout washable cover. Should a tube be punctured, the user can easily withdraw it from the cover and mend it just as he would a cycle inner tube.

If the damage is such as to make the tube quite useless, a circumstance which in other mattresses would render the whole mattress worthless, a new tube to replace the old one can be obtained from a dealer. Finally, the bed has the advantage of being very light; it weighs only about 1.8 kilograms and can be rolled into a comparatively small, compact package.

Special de luxe outfits consist of a bed combined with a sleeping bag which is stitched on to the bed and has a quilted satin lining.

Another handy accessory to have along on a jaunt is a green rubber case with slide fastener to hold and protect a camera. The camera case is provided with straps for handles.

Curved Finger Household Glove

THE Wilson Rubber Co., Canton, O., now markets a new household glove with several unusual features. It is made of real latex, under processes developed for making Wiltex surgeons' gloves. This, it is claimed, makes them twice as strong as old-type gloves, even though somewhat thinner.

This glove, moreover, has shorter curved fingers, covered by an exclusive Wilson patent. This construction reduces the amount of loose rubber in the palm of the hand and gives the curved finger glove a more natural, comfortable fit for all users. The palm of the hand and fingers are also made with the Wilson Firmhold Finish which, it is said, renders them slip-proof; so wet dishes and glassware can be handled with greater safety. The new glove comes only in orange, a color which has identified Wilson household gloves for years.



Latex Firmhold Finish Glove

Rubber Industry in America

EASTERN AND SOUTHERN

NRA Deputy Administrator

Among the deputy administrators of the National Recovery Administration is a man whose years of training and practical experience well qualify him for his arduous tasks—Albert Leland Kress. He was born in Watkins Glen, N. Y., on June 25, 1894, and attended the Watkins Glen High and the Harvard Business schools, graduating from the latter with distinction in 1933 after having specialized in marketing.

From 1918 to 1931 Mr. Kress was with the United States Rubber Co. as industrial engineer. He spent 8 of these years at its subsidiary, Lycoming Rubber Co., Williamsport, Pa. For 2 more years he was head of the central planning department of the U. S. Rubber plant in New Haven, Conn., and was manager of the industrial engineering department there for a similar period. Prior to his association with the rubber company Mr. Kress was engaged in engineering and construction work for 7 years. He joined the NRA in July, 1933, in the Division of Research and Planning. Later he became assistant deputy and then deputy administrator of the Rubber Section.

Mr. Kress has always been interested in industrial relations and in problems of industry planning. His experience has covered the introduction of works councils, the development of planning departments, standard cost systems, and the installation of wage payment plans, together with plant layouts and studies of plant consolidations. In 1923 he won third prize in the American Economic Association essay contest on "The Relations of Capital and Labor."

Mr. Kress belongs to the Taylor Society and the Ancient Free and Accepted Masons.

He may be reached at 820 Connecticut Ave., N.W., Washington, D. C.

Dunlop Tire & Rubber Co. has moved its New York, N. Y., offices from the Empire State Bldg. to the eighth floor of 500 Fifth Ave.

National Adhesives Corp., 820 Greenwich St., New York, N. Y., makes adhesives, glues, gums, pastes, and sizings.

Walter G. Patton has been made general traffic manager of St. Joseph Lead Co., The Doe Run Lead Co., Mine La Motte Corp., and Kansas Explorations, Inc., with offices at 250 Park Ave., New York, N. Y., and Bonne Terre, Mo. J. E. Bouchard is assistant general traffic manager with headquarters at Bonne Terre.



A. L. Kress

Hercules Powder Co., Inc., Wilmington, Del., temporarily is distributing in this country Tornesit, of German origin, until the Hercules firm can set up equipment to manufacture the material here.

Cameron Machine Co., 61 Poplar St., Brooklyn, N. Y., at a recent meeting of the board of directors elected Secretary William B. Wilshusen president to succeed the late James A. Cameron. The new president joined the Cameron company over 18 years ago as advertising manager, later becoming secretary and sales manager.

The O'Sullivan Rubber Co., Inc., operated its plants at Winchester, Va., and Gettysburg, Pa., 24 hours daily in 3, 8-hour shifts 5 days a week for some time until a sharp upturn in orders compelled it to introduce a 6-day week at the Winchester factory, which now runs 144 hours weekly. It is expected that the Gettysburg plant will soon adopt the same schedule. The company manufactures rubber heels, soles, taps, strips, top lifts, soling, cement, nose and stair treads, wheels, and castor and force cups. Trade marks include O'Sullivan, Camel, Sure Foot, Dreadnot, and Leviathan. The firm has branches at 366 Madison Ave., New York, N. Y.; 274 Summer St., Boston, Mass.; and 1112 Conway Bldg., 111 W. Washington St., Chicago, Ill. Company executives are R. J. Funkhouser, president; R. P. Funkhouser, vice president and treasurer; R. M. Hoffman, secretary; R. H. Cory, chairman of the board; and A. C. Halvosa, purchasing agent.

A.S.T.M. Meeting

The thirty-seventh annual meeting of the American Society for Testing Materials will be held at Chalfonte-Haddon Hall, Atlantic City, N. J., June 25 to 29, 1934.

The evening session on June 28 will be devoted to rubber, textiles, and electrical insulating materials. The papers to be read will consist of the following: "Report of Committee D-11 on Rubber Products," H. A. Depew, chairman; "The Testing of Rubber and Rubber-Like Material for Oil Resistance," O. M. Hayden, E. I. du Pont de Nemours & Co., Inc.; "Materials to be Developed for Structural Engineering Models," A. V. Karpov, Aluminum Co. of America; "The Testing of Raw Materials for Rubber Compounding," B. S. Taylor, The B. F. Goodrich Co.; "Report of Committee D-13 on Textile Materials," H. J. Ball, chairman; "Report of Committee D-9 on Electrical Insulating Materials," H. L. Curtis, chairman; "Effect of Moisture Content of Specimens on Results of Compressibility Tests for Molded Sheet Materials," W. A. Evans, Bell Telephone Laboratories; "Methods of Measurement of Dielectric Characteristics at Commercial Frequencies," P. H. Dike, Leeds & Northrup Co., and W. B. Kouwenhoven and J. B. McCurley, both of John Hopkins University; "A Comparison of the Methods for Testing Insulating Materials for Power Factor and Dielectric Constant at 1,000 Cycles," Mr. Kouwenhoven and L. W. Marks, General Electric Co.; and "Informal Report of Sectional Committee on Electrical Insulating Materials," Chairman Curtis.

Consolidated Products Co., Inc., dealer in machinery and equipment, has made alterations and extensions to its suite on the twentieth floor of 13-16 Park Row, New York, N. Y., adding a number of new private offices and enlarging executive and clerical space. The firm also reports a more widespread demand for used machinery, necessitating the additional office space to be of greater service to the trade.

The Eleventh National Exposition of Power and Mechanical Engineering will be held at the Grand Central Palace, New York, N. Y., the week of December 3, 1934, the same time as the annual meeting of the American Society of Mechanical Engineers. The exposition will be managed, as in the past, by the International Exposition Co., New York, and will again be under the personal direction of Charles F. Roth.

Rubber Code News

Sidney Weinberg, a B. F. Goodrich Co. director and a member of the management executive committee, and F. B. Davis, United States Rubber Co. president, were named members of the national recovery administration's industrial advisory board.

L. D. Tompkins, U. S. Rubber vice president, has been appointed to the Silk Textile Code authority as the government representative.

The NRA will hold a joint public hearing on uniform accounting manuals submitted for approval by the code authorities of the rubber and rubber tire manufacturing industries, to be conducted by Deputy Administrator A. L. Kress, beginning 10:00 a. m., June 5, Room 129, Willard Hotel, Washington, D. C.

Retail Tire and Battery Code

The code for the retail rubber tire and battery trade, approved May 1, 1934, by President F. D. Roosevelt, became effective May 14, 1934. The emergency regulations prohibiting the sale of tires and tubes at a net realized price less than those specified in the schedules will not be effective until June 14.

Reclaimers' Code Authorities

The following members of the reclaiming industry have been named code authorities: Louis J. Plumb, U. S. Rubber Reclaiming Co., chairman; V. H. Dingmon, Xylos Rubber Co., and William Welch, Midwest Rubber Reclaiming Co. Alternates, respectively: E. B. Curtis, Naugatuck Chemical Co.; A. I. Brand, Philadelphia Rubber Works; and Irving Laurie, Somerset Rubber Reclaiming Co.

Rainwear Division

Regulations pertaining to the application for permit to use NRA labels, and use thereof, pursuant to Chapter X, Article IV-F, as amended April 30, 1934, of the Code of Fair Competition

for the Rubber Manufacturing Industry has been approved by the Administrator.

J. L. Crewe, Jr., has been appointed Compliance Director of the Rainwear Division.

National Labor Board

The National Labor Board announced a ruling on May 17 in the dispute between the Eagle Rubber Co., Ashland, O., and the United Rubber Workers Federal Labor Union 18,683, involving alleged refusal of the company to bargain collectively and to adhere to a decision of the Cleveland Regional Labor Board. Alleged discriminatory discharge of several union employees led to a strike on November 29, which tied the plant up a day or so. Upon resumption of activities several employees were reinstated, as ruled by the Regional Labor Board, but about 53 employees remained on strike. Cessation of the strike and reinstatement of union members laid off prior to the strike was ordered by the board in its decision.

Arrow Compact

Arrow Compact is a new, dustless, free flowing carbon black produced by an unique mechanical treatment yielding a thoroughly blended product. The particles in Arrow Compact are agglomerated into tiny granules which do not fly about in handling, yet break down readily into the natural fineness upon mixing with rubber. None of the inherent reinforcing properties of the black are altered, and it may be compounded interchangeably with ordinary black.

Martin Rubber Co., Inc., Long Island City, N. Y., according to President Walter L. Tepper will continue indefinitely its policy of dividing earnings with employees whenever conditions permit. Mr. Tepper is mentioned in the following card of The Tepper Production Co.

American Cyanamid Notes

The American Cyanamid Co., the American Cyanamid & Chemical Corp., and subsidiaries recently moved to their new quarters, covering 4 floors, the fifty-seventh to the sixtieth, and part of the sixty-first, in 30 Rockefeller Plaza, New York, N. Y. Executive offices center on one floor; the sales department, another; the accounting and affiliated divisions on the third; and the engineering staff on the fourth. These offices, all outside ones, are air conditioned and sound-proof. Another feature is the private stairs connecting 3 floors. All details are modern and practical. Increased efficiency was one of the deciding factors in the organization's move, which is covered by a long-term lease.

American Cyanamid Co. and Pittsburgh Plate Glass Co. jointly formed the Southern Chemical Corp., with a Delaware charter, and have qualified to do business in Texas. The new corporation will produce a varied line of chemicals in connection with the operation of the alkali plant being constructed at Corpus Christi, Tex., by Southern Alkali Corp., also jointly owned by the 2 above-mentioned companies.

L. W. Dumont & Co., crude rubber broker and member of Commodity Exchange, Inc., moved from 50 Broadway to 50 E. 42nd St., New York, N. Y.

Kelly-Springfield Tire Co., 395 Lexington Ave., New York, N. Y., at a meeting of the board of directors on May 8 elected the following new members: F. R. Angevine, D. R. Weedon, and J. E. Searle. Mr. Weedon was made also a vice president and a member of the executive committee.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has applied DuPrene experimentally in place of rubber for test service of pneumatic tires built for high-speed buses and trucks. The exceptional resistance to heat, oxidation, and abrasion of such tires indicates that the mileage obtained may sufficiently exceed that of rubber tires to offset the increased cost. DuPrene sells at several times the price for rubber, but the cost of rubber in a tire is relatively a small portion of its full cost.

The Titanium Pigment Co., Inc., 111 Broadway, New York, N. Y., will erect a new eastern manufacturing plant at Sayreville, N. J., to supplement the plants operated at St. Louis, Mo., and Niagara Falls, N. Y., and will more than double the present production of "Titanox" pigments.

The Canadian Mechanical Rubber Corp. this month plans to start a factory at Orillia, Ont., Canada. C. H. Arnold, one of the promoters, went to the United States to arrange for shipping the necessary machinery to the new plant.

THE TEPPER PRODUCTION COMPANY

ESTABLISHED JULY 15, 1931

AFTER TWO AND ONE HALF YEARS OF RESEARCH AND EXPERIMENTAL WORK, TAKE PLEASURE IN ANNOUNCING

GRACE NANCY
1934 "BABY" MODEL A

DESIGNED - YOUR GUESS = OURS • RELEASED - MAY 21, 1934

WALTER L. TEPPER	CHIEF ENGINEER
GRACE TEPPER	PRODUCTION ENGINEER
DR. S. J. SCADRON	TECHNICAL SUPERVISOR

FEATURES OF THE NEW MODEL

TWO LUNG POWER • FREE SQUEALING • VERY REMOTE CONTROL • WATER COOLED BASE • GENERATES ITS OWN GAS • CHANGEABLE SEAT COVERS • ECONOMICAL FEEDER 1 QUART A DAY • SHIPPING WEIGHT - 6 LBS. 5 OZ. SELF TIRING • MUST BE HEARD TO BE APPRECIATED

ON DISPLAY AFTER MAY 26, 1934

AT DOCTORS HOSPITAL, EAST END AVE. AND 87TH ST., N. Y. CITY

THE MANAGEMENT ASSURES THE PUBLIC THAT THERE WILL BE NO NEW MODELS PRODUCED DURING THE YEAR 1934

NEW ENGLAND

Godfrey L. Cabot, Inc., carbon black manufacturer, 940 Old South Bldg., Boston, Mass., is erecting 2 new buildings at its Ellico, Tex., plant to manufacture Spheron. Each building will have a producing capacity of 40,000 pounds a day. At least one of them will begin operations about June 1, to make the total production of Spheron more than 3,000,000 pounds a month. Godfrey L. Cabot, the firm's head, sailed May 18 on the *S.S. Statendam* for a meeting on May 26 in Paris, France, of the Comité Directeur de la Fédération Aéronautique Internationale. Mr. Cabot is the United States member and vice president of the F. A. I., as well as a member of the Comité Directeur. His interest in aviation dates from the very early days of aviation. During the World War, Mr. Cabot got his gold wings, was commissioned a lieutenant in the U. S. Navy, the oldest pilot in the navy, and served from April, 1917, to March, 1919. He is president too of Aero Pick-up Corp., a company developing Mr. Cabot's own invention by which burdens may be picked up by airplanes in flight.

Fabric Fire Hose Co., Sandy Hook, Conn., was awarded the contract for supplying the Woonsocket, R. I., fire department with 1,000 feet of fire hose. The company received orders also from the Johnston Town Council for 150 feet of 2½-inch hose; 200 feet of 1½-inch hose; and 400 feet of ¾-inch hose.

Boston Woven Hose & Rubber Co., Boston, Mass., dispatched on May 14 to Irak, formerly Mesopotamia, what is believed to be the largest shipment of oil suction and discharge hose ever manufactured in this country. This shipment, as pictured, comprises 60, 30-foot lengths of 10-inch and 50, 30-foot lengths of 8-inch hose, each piece equipped with nipples and flanges. The 8-inch hose weighs 867 pounds, and the 10-inch, 1,167 pounds per length. The nipples and flanges weigh over 300 pounds each. The entire shipment weighs 207,000 pounds. Its manufacture required 21 tons of rubber, 8 tons of cotton, and 23 tons of metal.



Largest Shipment of Oil Suction and Discharge Hose Ever Made in America

Golf Ball Manufacturer

Still under 40, Harold I. Gould has achieved a success in life that many an older man may envy; for Mr. Gould is president of an ever-expanding company devoted to the manufacture of golf balls and balata covers, the Gould Golf Ball Co., 522-28 Main St., Wakefield, Mass., that he founded in 1932.

His birthplace is Marlborough, Mass.; his birthday, November 10, 1896; and his schools, Marlborough grades, Andover Academy, Huntington Preparatory, and M. I. T.

After his graduation from M. I. T. in 1918 with a B.S. in mechanical engineering, Mr. Gould held various positions as a consultant in the engineering field. Later he served as general manager for an oil company, as mill agent in textiles, and as vice president in a celluloid plant. He also was on the board of directors of several companies.

The organizations to which Mr. Gould belongs include the American Society of Mechanical Engineers, the Elks, the Odd Fellows, and the A.F.&A.M.



Harold I. Gould

The Washburn Wire Co., East Providence, R. I., will erect a group of 6 one-story buildings at its plant on Bourne Ave., Phillipsdale, R. I. The buildings will be of metal construction, equipped with all the latest improvements for manufacturing wire, to cost about \$45,000.

The Anawan-Arch Co., Pascoag, elastic braid manufacturer, will move to Providence, R. I., early in June. At capacity the plant employed between 150 and 175 workers, but for the past 2 years, owing to economic conditions, it has operated on a curtailed schedule with an average of 60 employees. Raymond Flynn is company president.

Emil W. Schwartz, chief of the chemical laboratory at the Bridgeport, Conn., plant of General Electric Co., was selected by the company to receive the Charles A. Coffin Award of Achievement, receiving the medal, cash, and an engraved scroll.

E. I. du Pont de Nemours & Co., Inc., through its Fairfield, Conn., plant has taken over the manufacturing process and business of the Velvetex Corp., formerly of LaPorte, Ind. Plant Manager Max N. Nickowitz reports that du Pont will add to its Rug Anchor line the Velvetex sponge rubber rug underlay material, used as a rug cushion as well as an anti-skid material. For the present du Pont does not intend to extend its efforts in sponge rubber beyond this type of material.

United States Rubber Co. at its waterproof footwear departments in Naugatuck, Conn., will continue indefinitely the 5-day operating schedule adopted April 23, according to Factory Manager Walter H. Norton. After a brief curtailment in production, the tennis footwear division on May 1 resumed a 4-day week, but no change in the bathing shoe schedule was announced. It is understood the usual summer shutdown for inventory will take place next month.

OHIO



"G-3," Goodyear Tire Designed to Give Greater Mileage on High-Speed Cars

Goodyear Tire & Rubber Co., Akron, has appointed Fred W. Climer, former general superintendent of the Goodyear factory in Argentina, factory personnel manager in charge of factory personnel activities in Akron plants, together with interplant relation matters and activities of all Goodyear subsidiaries throughout the world. H. L. Matti now is secretary of the Goodyear Relief Association, succeeding N. F. Staley, killed May 12 in an automobile accident. Goodyear's defense of its alleged violation of the Clayton Act in the tire contract with Sears, Roebuck & Co. will begin June 18, either in Akron or Cleveland. The hearing will be conducted by the Federal Trade Commission.

Seiberling Rubber Co., Akron, O., has filed notice at the office of the Secretary of State that Stanley N. Davis, 61 Winsor St., Cranston, R. I., is its authorized attorney and legal representative in Rhode Island.

The B. F. Goodrich Co., Akron, at the annual stockholders' meeting, May 2, in New York, N. Y., reelected the following directors for 3 years: V. I. Montenyohl, Wesson Seyburn, Albert A. Sprague, and Corliss E. Sullivan. Two vacancies in the board were filled by the elections of Thomas H. McInnerney and Sir Walrond Sinclair, chairman and managing director of the British Goodrich Rubber Co. At the meeting of the directorate, following that of the stockholders, members of the executive committee and company officers were reelected. James D. Tew, Goodrich president, and Joseph O. Hammitt, vice president, American Cyanamid Co., Rockefeller Plaza, New York, were among the guests of the dinner and meeting given by Alfred P. Sloan, Jr., General Motors president, for his forum on progress given in Chicago, Ill., May 24, the eve of the reopening of the Century of Progress.

Firestone Activities

The Firestone Tire & Rubber Co., Akron, announced that 4,789 factory time-card employees will receive vacations with pay this year, amounting to approximately \$200,000, the largest sum the company ever paid in this connection. Workers who have served 5 years will receive a week's vacation, and those who served 10 years will receive 2 weeks, the pay being computed on the basis of a 30-hour week and present hourly rates. These vacations are in addition to those of salary employees who receive the customary 2 weeks with pay.

Harvey S. Firestone, Sr., chairman of the board, who has taken a personal interest in the development of the low pressure tractor tire from the time it was pioneered by Firestone engineers, is shown in the illustration plowing in the Firestone Employee Gardens. Born on a farm and operator of 2 farms, Mr. Firestone has always been particularly interested in any farm equipment that will save time and money for the farmer. He believes the farmer needs these tires to get the additional traction in soft ground and absorb surface irregularities, saving fuel, time, and wear and tear on man and machine.

James W. Maples, superintendent of Plant No. 1, has been named superintendent of the Firestone Tire & Rubber Co., Ltd., plant, Brentford, Eng.

Improvement and expansion plans which will make the Firestone power plant "one of the finest in America" are now being developed. The company recently purchased a 300,000-pound per hour, 1,400-pound pressure sectional-header boiler with water-cooled walls, slagging furnaces, economizer, air heater, and pulverized coal burners.

The Firestone Factory and Exhibition Building, which together with the Firestone scientific rubber exhibit in the Hall of Science represents the rubber industry at A Century of Progress, Chicago, Ill., has been almost doubled in size. The many new exhibits are both interesting and instructive.

E. J. Smail, Jr., vice president and sales manager of The Rubber Service Laboratories Co., a division of Monsanto Chemical Co., manufacturer of chemicals for the rubber industry, recently returned to Akron after a 4-month trip in the Far East. Mr. Smail states that the manufacture of rubber goods there is increasing, and the Orient is learning to make its own chemicals and other ingredients for the rubber industry. All types of rubber goods are being made by fairly large companies although the very small firm predominates. Labor costs are so low that other nations cannot compete with such countries as Japan and China should they flood a market with finished products unless the country involved sets up prohibitive tariffs. The Orient boasts modern equipment in modern plants able to produce quality goods. Far Eastern countries are advantageously located as far as raw rubber is concerned, but not for cotton; yet their exceptionally low labor costs more than make up the difference. Mr. Smail further says that obstacles in the way of business are the difference in language and the financial standing of the rubber companies. Since few companies have approved standings, it is necessary to negotiate with agents, sub-agents, and still more sub-agents. The rubber business in the Orient has declined somewhat from its peak owing to the high protective tariffs placed by other nations against goods from the Far East, where there are no particular hours of operation or number of working hours, most employees laboring at least 12 and generally 16 hours daily.

The Patterson Foundry & Machine Co., East Liverpool, has appointed William Soherr manager of its New England territory, with headquarters at Boston, Mass. Mr. Soherr is a graduate of the Institute of Technology, Darmstadt, Germany, and a member of the American Chemical Society. During the past decade he was with the Inland Lime & Stone Co., Ford Motor Co., and E. B. Badger & Sons Co.



Harvey Firestone Riding a Farm Tractor with Low Pressure Tires

After 40 Years' Service

During last year the associates of Burton F. Stauffer tendered him a dinner in honor of his election as general manager of the Miller Rubber Products Co., Inc., a division of The B. F. Goodrich Co., Akron. It was a tribute to a man who, 40 years ago, got his first job in the same company and who, through his own efforts, won the high position to which he was elevated.

Mr. Stauffer was born in 1879 at Bowditch, O. In 1893 he was just beginning high school when the panic of that year forced him to go to work. His first job, at 14, was rolling tire wrappers at Goodrich. Five years later he won his reward in an appointment as foreman of the druggists' sundries division. After 11 years he was made superintendent of Faultless Rubber Co., Ashland, O.

In 1912 he returned to Goodrich as manager of the druggists' sundries department. In 1916 he became one of the 6 assistant superintendents in charge of production, and in 1925 assistant general superintendent of the mechanical division. He held that office until his appointment as general manager of Miller Rubber Products Co., Inc., in 1933.

Mr. Stauffer's vocation and avocation have been the rubber business. He is a member of the Akron City Club, the Akron Automobile Club, and Chamber of Commerce.

The Ackerman Rubber & Plastic Molding Co., 986 E. 200 St., Cleveland, recently incorporated under the laws of the state of Ohio, is in a position to offer complete service in the engineering, designing, and developing of molded hard and soft rubber products, together with other various plastics. The engineering and technical staff is available to work with customers on any special designs. The firm has installed the very latest types of molding presses and other equipment, all technically controlled so that the most intricate mechanical or artistic article can be manufactured. F. J. Ackerman is president and general manager. A. C. Fulton, vice president and chief engineer, for many years was chief engineer of the Aetna Rubber Co.

Toledo Rubber Products Corp., Middlefield, at a recent meeting of its directors elected the following officers: president, Smith Johnson, to succeed the late J. E. Johnson; vice president, Earl W. Coble; secretary, William P. Miller; treasurer, L. M. Silverthorne; and general manager, Hugh G. Johnson.

The Premier Rubber Mfg. Co., Dayton, manufacturer of mechanical and hard rubber products, will erect an addition to its plant, consisting of a 2-story structure of brick, steel, and concrete, containing 10,000 square feet of store space to accommodate a plating department, a warehouse, and storage facilities. There will be no interruption to plant operation during the new construction work. The firm also has

NEW JERSEY

Rubber manufacturers of New Jersey are well pleased with present business conditions, which are much improved over last year's. The strike settlements in the automobile industry had good effect upon Trenton rubber plants making automotive products. Orders have increased also for mechanical goods.

Jos. Stokes Rubber Co., Trenton, reports declining business for some products. President William J. B. Stokes, out since last December when he fell on an icy pavement and seriously injured his arm, has returned to his desk. Mr. Stokes recently contributed \$1,000 in the Trenton Y.M.C.A. drive. Paul Gunkel, manager of the Stokes factory in Welland, Ont., Canada, who had been recuperating from a serious illness in Georgia, has resumed his duties at the Canadian plant.

Murray Rubber Co., Trenton, finds conditions unchanged. General Manager William Trethaway recently visited the South on business.

Mercer Rubber Co., Hamilton Square, continues with good business.

Acme Rubber Co., Trenton, has announced that business is much better now than a year ago.

Pequanoc Rubber Co., Butler, manufacturer of reclaimed rubber, has appointed Harold P. Fuller its New England sales agent, with offices at 844 Park Square Bldg., Boston, Mass.

William W. Higgins, manager of the New York, N. Y., office of United Carbon Co., has suffered a nervous breakdown and is resting at his home in Caldwell, N. J.

Puritan Rubber Co., Trenton, is operating to full capacity on orders for rubber tiling.

Pierce-Roberts Rubber Co., Trenton, now runs 24 hours daily, with many orders on hand for spring delivery.

The Pocono Co., Trenton, finds business has improved since last month.

Essex Rubber Co., Trenton, continues busy. Vice President Lawrence H. Oakley was on a business trip through New England.

Whitehead Bros. Rubber Co., Trenton, reports that business remains good, with employees working full time.

Weldon Roberts Rubber Co., Newark, has installed special machinery to manufacture rubber bands. The company since its establishment in 1912 has been making all kinds of erasers, which are shipped to far corners of the world. It now offers more than 150 types of erasers in 88 styles, the manufacturing all being done from crude rubber to finished product in its spacious plant on Sixth Ave. The company now turns out 10,000,000 pieces a month.

offices at 2-265 General Motors Bldg., Detroit, Mich., and at 201 N. Wells St., Chicago, Ill. Company executives include Jos. F. Westendorf, president; Harry H. Gerstner, vice president; and John Westendorf, treasurer and general manager.

Thermoid Co.

Thermoid Co. and wholly owned subsidiaries, exclusive of Southern Asbestos Co. and after eliminating inter-company sales, reported that April sales increased 3.58% over March and 74% over April, 1933. Net sales of Southern Asbestos in April were about 1/3 less than in the preceding month, but were more than 250% greater than in April, 1933.

The parent firm continues to operate at capacity, and Woven Steel Hose & Rubber Co., a subsidiary, also is running full handed.

Vice President F. Robert Lee has returned from a business trip through the Midwest.

President Robert J. Stokes recently resigned because "of differences of opinion as to policies."

Paul Salzman, of North Bergen, having filed suit in the Court of Chancery charging mismanagement and waste in Thermoid affairs asks that a receiver be appointed. The petition states that the defendant firm owns all outstanding stock of the Thermoid Rubber Co., the Thermoid Textile Co., and the Woven Steel Hose & Rubber Co., with plants at Trenton, and 96% of the stock of the Southern Asbestos Co., Charlotte, N. C. Outstanding Thermoid securities total \$10,862,920 according to the petition. Assets, it is alleged, inflated to a fictitious value, are worth much less than represented.

Vice Chancellor Egan has ordered the company to show cause why the appointment of a receiver should not be allowed. A temporary restraint has been issued against listing any additional stock with the New York Stock Exchange or any other exchange.

MIDWEST

Western Rubber Co., manufacturer of rubber goods for various industries, Goshen, Ind., has announced its revised executive personnel as follows: George B. Slate, president; Ray Deahl, vice president; Milton M. Latta, treasurer and general manager; W. C. Latta, secretary; and W. T. Stalter, sales manager. Treasurer M. M. Latta also announces that the company, enjoying a very nice volume of business this spring, is employing a larger number of people and working longer hours per week than ever before.

Naph-Sol Refining Co., Muskegon, Mich., manufactures Naph-Sol products including rubber solvent; technical and cleaners' naphtha; lacquer, paint, and varnish thinners; gasoline; kerosene; distillate; tractor fuel; and fuel oil. W. E. Anderson is president.

Advance Mold Mfg. Co., which recently moved from 1435 N. Ashland Ave. to larger quarters at 4417 Carroll Ave., Chicago, Ill., has added much new machinery and equipment. Manager G. H. Ryan stated the plant now is equipped to make any kind of mold for mechanical rubber goods.

OBITUARY



Raymond B. Gillette

Veteran Rubber Man

PNEUMONIA and heart disease caused the death, on May 20, at Eau Claire, Wis., of Raymond B. Gillette, who founded the Gillette Rubber Co., Eau Claire, in 1916, when he became vice president. In 1929 he was also made treasurer, and when the United States Rubber Co. acquired his firm in 1931, Mr. Gillette became chairman of the board.

Prior to coming to Eau Claire he had served 3 terms as mayor of Benton Harbor, Mich.

Surviving are his widow and a stepson.

Chemicals Manufacturer

IN A New Rochelle, N. Y., hospital on May 17, Herman A. Metz died from a stomach ailment. He was a well-known manufacturer of chemicals, who had been president of General Dyestuff Corp., 230 Fifth Ave., New York, N. Y., which he helped form in 1926. Mr. Metz had led a wide and active career covering more than 50 years in the political, social, and economic life of New York. He was controller of the city from 1906 to 1910 and a member of the House of Representatives from 1913 to 1915. He was also a brigadier general of the United States Army Reserves Quartermaster Corps. As expected of one so prominent in public life and the business world, the deceased belonged to many companies, organizations, and clubs.

He was born on the lower East Side of New York on October 19, 1867, and later attended the public schools. When his family moved to Newark, N. J., he went to Newark High School for a year. Since he was 12 years old, he had been self-supporting.

Mr. Metz leaves his wife, 4 sons, and a brother.

Masonic services were held for him on May 19. A military funeral, attended by many men noted in business

and politics, was conducted at the West End Collegiate Church, New York, May 20. Burial was in Kensico Cemetery.

Clyde E. Lowe

CLYDE E. LOWE, head of Clyde E. Lowe Co., Cleveland, O., manufacturer of calender shells and tube mandrels, died suddenly of heart failure on May 22. His obituary will be published in our next issue.

FINANCIAL

Company Reports

Baldwin Rubber Co., Pontiac, Mich. For 1933: net income after interest, bad debts, and other deductions, \$48,964, equal to \$1 a share on 49,115 Class A shares, compared with net loss of \$81,279 in 1932.

Converse Rubber Co. and subsidiaries, Malden, Mass. Year ended March 31: net income after expenses, depreciation, interest, taxes, and other charges, \$49,779, equivalent after \$2 preferred dividend requirements, to 25¢ a share on 57,232 common shares.

Fisk Rubber Corp. and subsidiaries, Chicopee Falls, Mass. Quarter ended March 31: net income after federal taxes and other charges, \$120,287, equal after dividend requirements on 37,836 shares of \$6 preferred stock outstanding at close of 1933 to 15¢ a share on 423,405 \$1 par common shares outstanding on December 31 last. In a separate account of "export accounts in liquidation" for the period, company reported net loss of \$1,031, including \$2,701 profit on exchange and after expenses which was transferred to reserve account.

Jenkins Brothers, 80 White St., New York, N. Y., and subsidiaries. Quarter ended March 31: net income after depreciation and other charges, \$50,018, equal after 7% preferred dividends to 31¢ a share on 125,744 common shares.

Raybestos-Manhattan, Inc., Bridgeport, Conn. Quarter ended March 31: net income of \$292,973.34, equivalent to 46¢ per share, against a net loss of \$63,428.51 during the same period in 1933. The balance sheet at March 31 revealed total assets amounting to \$16,308,099.68, including \$7,755,895.28 of current assets, equivalent to 9 times the current liabilities of \$830,599.81 at the close of the quarter. The company had no banking or funded debt or other capital obligations. The book value of its 642,900 shares of stock outstanding, after deducting the 33,112 shares in the treasury, was \$22.90 per share. The net current assets represented \$10.77 per share, of which cash and marketable securities amounted to \$3.90 per share.

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Herbert S. DeLanie

Rubber Trader

RUBBER circles, not only in this country but also in London, Holland, and Singapore, last month were deeply grieved to learn of the sudden death, from a heart ailment, on May 7 of Herbert S. DeLanie at his home in Montclair, N. J. The deceased, about 40 years old, was treasurer of the crude rubber firm, M. Rothschild & Co., Inc., 80 Broad St., New York, N. Y., with which he had been associated since 1927.

Mr. DeLanie entered the rubber business in 1912 as a clerk with Robinson & Co. By 1914 he was trading on the market as assistant to the firm's manager. When the company was discontinued in 1918, Mr. DeLanie became a partner in T. A. Desmond & Co., remaining there until 1923. Until he joined the Rothschild organization he was in the brokerage business on his own account.

Services were held on May 9. Interment was in Greenwood Cemetery, Brooklyn.

Former Firestone Officer

ILL health caused Anton Henry Zimmerer, 38, until recently treasurer of the Firestone Tire & Rubber Co. of Canada, Ltd., Hamilton, Ont., to take his own life on May 14. He had come to Hamilton from the Akron offices about 9 years ago.

Mr. Zimmerer, who had a wide circle of friends, was well known in the sporting fraternity.

His widow, a daughter, and a sister survive.

Sales Manager

ALVIN S. NEUMANN, 33, sales manager of the Crescent Insulated Wire & Cable Co., Trenton, N. J., was fatally injured May 13 in an automobile accident. His wife and a woman companion were also hurt.

Mr. Neumann was an officer and a popular member of the Hopewell Valley Golf Club. He leaves a family.

Rubber Industry in Far East

Malaya

The contradictory reports circulated about restriction and the secrecy surrounding negotiations engendered skepticism that restriction would ever become a fact. Therefore the announcement that an agreement had been reached must have been a shock to many, particularly those whose opinions fluctuated for and against control, those who, moved by the mutual suspicion different producers had for one another and the distrust of Dutch proposals, came to regard restriction as neither likely nor, when prices continued to recover, really desirable. Looking back, it is clear that most of the ill-feeling and dissatisfaction were caused by the general assumption that any restriction scheme would have to be drastic, involving curtailing production by at least 50%. Certainly most of the schemes industriously turned out by would-be rescuers of the industry were radical in purpose, aiming to bring back shilling, not to say 2-shilling, rubber overnight.

Compared with these, the present scheme must appear tame enough and has no doubt caused much disappointment. It is to be hoped that this will soon be forgotten and will not arouse unfair criticism of what must be considered as sane and fair a scheme as could have been devised under present circumstances.

Attention lately has been called repeatedly to the extending use of pneumatic tires on horse-drawn vehicles in England and a few other European countries. Now Dunlop is introducing pneumatic tires for bullock carts in India, Ceylon, and Malaya; while the Goodyear Orient Sales Co. in Malaya plans to import pneumatic tires for wheelbarrows.

The Dunlop Rubber Co. will extend the capacity of its plant at Tanjong Pagar for shipping latex in bulk. This plant now has a capacity of 32,000 gallons, and the erection of 4 new tanks will increase capacity to 97,000 gallons. Since Dunlop's first shipment of 25,380 gallons left here in last November, about 115,000 gallons of latex have been sent to British and American ports by this method.

Better prices for rubber are bringing better days for those employed in the rubber industry. Thus the Board of the Rubber Research Institute is reported to have restored all salary cuts imposed on the staff since January, 1932, with repayment of past cuts. Several rubber companies have raised salaries, and a few have been paying bonuses; but judging from the discontent and restlessness among planters, the increases have not yet been general or substantial enough.

Indo-China

The continued improvement in the price of rubber has led to the decision not to continue the subsidy to rubber planters after the first quarter of the current year. The subsidy, first granted in 1930, has been gradually reduced, and for the first quarter of 1934 was put at 0.60 francs per kilo. It is safe to say that it is only owing to this aid that Indo-China planters have been able to raise their outputs from 10,454 metric tons in 1930 to 12,000 tons in 1931, 14,603 tons in 1932, and 16,700 tons in 1933.

A number of the younger plantations came into tapping during 1933, and it is expected that for the next 5 years output will be as follows: 1934, 22,500 tons; 1935, 27,000 tons; 1936, 34,000 tons; 1937, 44,000 tons; and 1938, 52,500 tons. However despite this rapid increase it will be long before Indo-China is in a position to supply all France's rubber needs even if planting is extended, for during 1933 France consumed about 65,000 tons of rubber.

Ceylon

Manufacturing rubber goods in Ceylon is now being considered by the Executive Committee of Labor, Industry, and Commerce because of a motion in the State Council that the Government should establish rubber factories to manufacture rubber goods locally. In this connection, the director of the Rubber Research Scheme, T. E. H. O'Brien, wrote the committee no reason existed why shoes, flooring, toys, molded goods, rubberized fabrics, etc. should not be made in Ceylon. But since machinery and equipment are expensive, he recommended that only one product, as shoes, for instance, should be taken up first, other products being gradually added. An assistant chemist with industrial experience is to be engaged by the Research Scheme, who will devote himself to the problems connected with rubberizing with latex, latex compounding, etc. so that in case a state rubber factory is decided on, there would be coordination between the work of the Scheme and the factory. It was further pointed out that a restriction scheme based on control of exports would make rubber in the producing countries available at a price considerably below that of outside supplies.

In a separate memorandum, J. C. Rock, director of Commercial Intelligence, stated that Ceylon had imported rubber goods to a value of 3,254,335 rupees in 1931 and 2,183,013 rupees in 1932; hence the desire to produce goods here was not unreasonable.

Netherlands East Indies

The question of packing rubber is once more being taken up by the West Java Experiment Station in view of complaints received from abroad regarding the large number of broken cases landed and the careless manner of wrapping rubber before it is placed into the cases, causing much trouble from splinters between the rubber sheets.

The larger number of broken cases now received, it is pointed out, is due to the fact that the average quality of cases has deteriorated. Besides planters, in economizing on costs, have been packing too much rubber in a case.

To reduce breakage of cases as much as possible the Avros Experiment Station has worked out a scale indicating the maximum weights of the different grades of rubber that can be safely packed in good quality cases, which follows:

KIND OF BLANKET	CASES PER TON OF RUBBER	POUNDS PER CASE
Dark brown	14	160
Light compo	13	172
Crepe	12	187
Sheet 5 mm. thick	10	224
Sheet 4 mm. thick	9.5	236
Sheet 3 mm. thick	9	249
Sheet 2 mm. thick	8.5	263

The importance of careful wrapping in sheets of the same quality as the rest of the rubber in the case is particularly stressed since thus much trouble is saved manufacturers. In some American factories the outer wrapping is not removed, but a powerful stream of compressed air is directed on a bale as it slides out of the case, by which impurities on the surface are removed; while in addition the surface is lightly singed to ash all easily inflammable particles that may still be adhering. After brushing, the rubber is cut up in the usual manner and only washed if required for special purposes. In Germany, Continental and Excelsior have found it is more advantageous to remove the wrapping from high-grade rubber and to eliminate washing. Neither of these processes can very well be followed if, through careless wrapping, splinters find their way into the interior of a bale.

At the Avros station 2 systems of tapping young buddings were compared. In the first tapping was carried out alternate monthly with bark consumption amounting to 5 cm. per tapping month; while in the other the trees were tapped one day and rested 3 days, bark removal being at the rate of 2 cm. per month. In the latter system, nevertheless, more than 1½ times as much bark was exercised per tapping as in the first.

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Rubber Industry in Europe

GREAT BRITAIN

Restriction Reactions

The new restriction scheme is naturally the main topic in rubber circles, and most people agree with R. W. Harrison, who said that all interested in rubber must have been relieved upon learning a satisfactory restriction agreement had finally been adopted. Now it remains to be seen how soon the scheme will be inaugurated.

Questioned on the matter in the House of Commons, Sir P. Cunliffe-Lister said that it was hoped to enforce restriction in British territories as from June 1. That the Netherlands East Indies will not be lagging is evident from the fact that a few months ago the Central Bureau of Statistics, Batavia, sent out questionnaires to estates to obtain data necessary for restriction. Furthermore, Harry Symington, of Symington & Wilson, rubber broker, calls attention to a bill passed last September in the Dutch East Indies empowering the government to curtail at short notice the export of any product and also to restrict the inland transportation of certain commodities. Rubber, not specifically mentioned, is automatically covered by the provisions of this bill.

It is not to be expected that all producers or consumers will be pleased with the new scheme. But on the whole it has been welcomed here, and those having the best interests of the industry at heart are satisfied the plan will not encourage undue soaring of prices with consequent revival of reclaim consumption in boom-time proportions or undue interest in synthetic rubber on the one hand and serious interference with efforts to extend uses of rubber on the other. At a meeting of the Labu (F.M.S.) Rubber Co., Ltd., J. G. Hay declared that with about 25% restriction, a price of 7d. to 8d. would be fair and equitable.

New Uses of Rubber

Rubber in various forms is finding a growing use for upholstery purposes, and rubber combined with hair is one of the most interesting developments in this direction. Several processes for making such upholstery have been worked but independently by different inventors. Hairlok Ltd., London, makes a padding of varying degrees of softness and resilience, of hair coated with rubber. This material can be used either with or without springs and is supplied molded to shape or in sheets and rolls. It is said to be extremely durable, and molded parts, once put in place, hold their shapes practically in-

definitely without the aid of cord or stitching.

Experiments are being carried out with wool packs, for wrapping wool for export, made of jute impregnated with latex, and sample packs have been sent to Australia, New Zealand, and South Africa. It seems that packs treated with latex are less perishable than those impregnated with ordinary rubber and are also more elastic; besides they withstand sea water. Other packs treated with cellulose are also being tested. These investigations are being conducted by the Wool Industries Research Association, Torridon, Leeds, in cooperation with the Rubber Growers' Association, Messrs. Thos. Biggs (Manchester) Ltd., Imperial Chemical Industries Ltd., and the Dunlop Rubber Co., Ltd.

New rubber toys put out recently by George Maclellan & Co., Ltd., Glasgow, include building bricks and farmyard animal sets.

Company News

Various organization changes are contemplated by the British Goodrich Rubber Co., to provide further capital for expansion and to modify relations with the American concern. It is proposed to raise the capital to £2,000,000 by issuing 1,050,000 new £1 shares and to buy the 150,000 preferred ordinary shares of the India Rubber, Gutta-Percha & Telegraph Works Co., whose ordinary shares British Goodrich already holds. Shareholders will be offered 16s. 6d. per share in cash or one British Goodrich ordinary share for every 2 preferred shares of the India Rubber. It is further intended to change the name of the concern to British Tire & Rubber Co., to remove any impression that the firm is limited to the products of the American company. The above proposals, if passed, will permit the company to sell its products all over the world and not merely in the United Kingdom and British colonies, while at the same time it will still be in a position to draw on the experience in manufacturing and technology of the American concern.

Rubber linoleum and other floor coverings with rubber base are to be manufactured and sold by the newly formed Universal Rubber-Linoleum Ltd. This company, which has made an agreement with the Rubber Linoleum Mfg. Syndicate, Ltd., P. Schidrowitz, Ralph M. Ungar, and M. W. Philpott, has a nominal capital of £125,000 in 5s. shares. The first directors are: Percival Burgess, director

and chairman of Malaysia Rubber Co., Ltd.; Arthur W. Browne; David Scott, director of Woodend (Kelani Valley, Ceylon) Rubber & Tea Co., Ltd., and Taylor Nobel & Co., Ltd.; Mr. Ungar, technical adviser, Delacoste & Cie., rubber manufacturer, Asnieres-sur-Oise, France; and Harry C. Young.

GERMANY

Business Deterrents

The upward price trend of crude rubber, carbon black, cotton, etc. has added to the anxiety of German rubber manufacturers whose export business has already suffered considerably because of import restriction and exchange difficulties and will be further hampered by higher prices which will inevitably follow the rise in raw materials. Underselling and lowering of quality, already rife, will no doubt be further encouraged. This possibility has already been recognized, and suggestions have been made to form export associations to end undercutting by German firms in foreign markets and at the same time to improve quality and reduce production costs by specialization and standardization.

In connection with the above, efforts are being made to establish a German Chamber of Commerce for the Netherlands at Amsterdam to help German manufacturers and business men retain their hold on the Netherlands market, always important for Germany.

Declining Toy Industry

Foreign competition, particularly from Japan and Hungary, has made the manufacture of rubber dolls and toy figures so unprofitable in Germany that 2 of the 3 local firms producing these goods have dropped the line altogether. One of these, the Harburger Gummiwaren Fabrik Phoenix A.G., probably the first to introduce rubber toy figures enameled in various colors, was putting out a high-grade article. Unfortunately reduced purchasing power has forced the German public to turn from high-quality, but more expensive, articles to cheap, inferior imitations from abroad. On the other hand the export business has suffered from the restrictive measures adopted by foreign governments.

The one concern still continuing to make rubber toys is the Rheinische Gummi-u. Celluloid Fabrik, which was preparing to follow the example of the other 2 firms, but decided instead to expand its output to such an extent as to be in a position to combat competi-

tion successfully. Since last fall it has put out 69 new designs and is constantly increasing its selection so that local dealers will have no excuse, on the score of lack of variety, at least, to turn to foreign sources for supplies.

Vulcanizing Hollow Articles

The I. B. Kleinert Rubber Co., G.m.b.H., Hamburg, has patented a method of vulcanizing bathing caps, gloves, nipples, etc. An unvulcanized bathing cap, for instance, is drawn over a hollow aluminum core or other good conductor of heat, which may have a smooth or engraved surface. Fabric covers are inserted between rubber and core and also tightly drawn over the rubber itself. The mold is then placed, open side down, over an electric bulb fixed on a heat-insulating base; while to retain heat the whole is encased in a protective jacket with removable top. The current is turned on for about 10 minutes until a temperature of 142° is reached, then turned off, and the article is left in the closed jacket for another 15 minutes to complete vulcanization. As the top of the jacket is removable, the progress of cure can be observed at any time. Since the article is heated from the inside, no loss of heat occurs; while temperature and curing process can be very exactly regulated, thus reducing rejects to a minimum, it is claimed. A number of molds can be heated at a time by arranging bulbs in rows, which one person can attend. A further advantage of this method, it is said, is the elimination of fire risk. Besides bulbs, other heating media can be used as resistance wires encased in fireproof material or bodies heated by gases, or liquids.

European Notes

France imported much more crude rubber, gutta percha, and balata during 1933 than in 1932: 710,223 quintals against 469,467. But manufactured rubber imports declined 7.7% in quantity, 8,340 tons in 1933 against 9,040 tons in 1932, and over 17% in value, 107,757,000 francs against 130,381,000 francs. Most countries showed decreased imports, except Austria, Italy, and the United States, whose figures increased 52.3%, 37.5%, and 6.5% respectively.

Among the imports were unvulcanized sheet, 7,050 against 5,665 quintals; garments and accessories of rubberized fabric, 438 instead of 1,968 quintals; automobile tires and tubes, 52,797 against 55,437 quintals; hard rubber and manufactures thereof, 1,140 against 893 quintals; sanitary goods, 2,906 against 2,468 quintals; and footwear, 533,366 pairs against 369,704 pairs.

Reports state the well-known Czechoslovakian firm of Bata will extend its activities by making hose, packing, carpets, and various other technical goods.

The expansion of the rubber industry in Czechoslovakia in recent years

is illustrated by the enormously increased crude rubber imports, the equally great shrinkage in imports of manufactured rubber goods, and the increased exports. Thus net crude rubber imports have risen from 4,604 tons in 1930 to 10,551 tons in 1933. Footwear imports, valued 33,835,000 Czech krone in 1930, were only 840,000 in 1933; and pneumatic tires, value 143,254,000 C. krone, fell to 20,916,000 C. krone. Exports, particularly of footwear, constantly gaining during the last few years, now seem to have become stationary and even show a slight drop in quantity and a much greater decline in value, respective figures for 1933 and 1932 having been 5,014,944 pairs, value 29,293,000 C. krone, and 5,055,670 pairs, value 74,287,000 C. krone. The *Gummi-und Asbest Zeitung* points out that while the rubber industry in Czechoslovakia is now independent, its condition has not been improved thereby because of considerable overexpansion on the one hand and underselling on the other. So that despite restriction of imports and protective duties selling prices are lower there than probably in any other country in the world. No attempts at bringing the industry out of this chaos by organizing cartels and conventions have so far succeeded.

Imports of rubber boots and shoes and snowshoes into Norway will, according to a ruling of March 12, 1934, not be allowed without special import permits.

It is learned in connection with the above that Norwegian importers of rubber footwear have organized as "Gummifottoi-importorenes Forening" to guard their interests.

Uzinele Chimice Romane, Bucharest, Roumania, will extend its works to produce rubber galoshes and snowshoes. According to reports, the company has arranged with the Viking Snowshoe & Galoshes Factory to manufacture locally types of footwear hitherto imported into the country by the Bucharest representatives of the Viking concern, and it is intended to have 2,000,000 pairs on the market by the fall.

Financial

(Continued from page 55)

Norwalk Tire & Rubber Co., Norwalk, Conn. Six months ended March 31: net loss after expenses, depreciation, and other charges, \$2,885, in contrast with net profit of \$3,750 last year.

Thermoid Co. and wholly owned subsidiaries, Trenton, N. J. Quarter ended March 31: net income applicable to stock of company, \$48,534, against net loss of \$103,363 last year. Net income of Southern Asbestos Co., 96% owned, after taxes and other charges, was \$8,203, against \$10,596 loss last year.

United Shoe Machinery Corp., 140 Federal St., Boston, Mass. Year ended February 28: net profits after charges of \$9,458,016, equal after preferred dividends to \$3.93 a share on the 2,291,284 common shares, compared with net profits in the preceding fiscal year of \$6,023,483, or \$2.42 a share, on the common stock. The company received dividends from the accumulated surpluses of associated companies of \$5,525,000 credited to surplus and not included as income.

Pirelli Co. of Italy, Milan, Italy. For 1933: net profit after taxes, interest, depreciation, and other charges, 28,239,809 lire, against 22,750,191 in 1932.

Emo

Emo is an emulsion of partially vulcanized vegetable oil for use with latex. It is not a dispersed factice, but an oil emulsion containing no rubber. The effect of Emo in latex compounds is that of a heavy-bodied non-drying vegetable oil. It is made in both light and dark color.

Stonoleum Floors

Concrete floors are hard, brittle, and dusty; and asphalt floors are too soft for heavy industrial use. Traffic over such floors develops holes, the repair of which is difficult, particularly so in the case of cement floors because the new cement will not adhere to the old. This difficulty is readily overcome by the use of the product known as Stonoleum. This material requires no chipping, chiseling, or dovetailing of the surface to be repaired. It will bond to either rough or smooth surfaces and can be thinned down to a feather edge that will not break at the joints, thus making a repaired floor as even and uniform as a new one.

One of the chief advantages of Stonoleum is its rapid drying quality. A new floor laid on Saturday or an old floor patched with this material is ready for use for the heaviest kind of traffic on Monday. Continental Asbestos & Refining Co., One Madison Ave., New York, N. Y.

Dividends Declared

Company	Stock	Rate	Payable	Stock of Record
Boston Woven Hose & Rubber Co.....	Pfd.	\$3.00 s. a.	June 15	June 1
Dunlop Rubber Co., Ltd.....	Ord. Reg.	8%	May 25	May 15
Dunlop Rubber Co., Ltd.....	(Am. Dep. Rec.) for Ord. Reg.	8%	June 1	May 15
Firestone Tire & Rubber Co.....	Pfd.	\$1.50 q.	June 1	May 15
Gates Rubber Co.....	Pfd.	\$1.75 q.	June 1	May 15
Goodyear Tire & Rubber Co.....	Pfd.	\$1.00 q.	July 2	June 1
Pirelli Co. of Italy.....	Am. Shares	\$4.25 q.	Apr. 13	Apr. 6
Raybestos-Manhattan, Inc.....	Com.	\$0.25	June 15	May 31
United Elastic Corp.....	Com.	\$0.20 q.	June 23	June 7

Patents and Trade Marks

MACHINERY

United States

- 1,951,402. **Dipped Article Form.** J. R. Gammeter, Akron, O., assignor to Revere Rubber Co., Providence, R. I.
- 1,951,974. **Tire Vulcanizing Mold.** J. O. Goodwin, Akron, O., assignor to Seiberling Rubber Co., a corporation of Del.
- 1,952,241. **Extrusion Press.** P. Eckert, Cologne, assignor to Eckert & Ziegler G.m.b.H., Cologne-Braunsfeld, both in Germany.
- 1,952,261. **Loop Former.** E. B. Kerst, assignor to Proctor & Schwartz, Inc., both of Philadelphia, Pa.
- 1,952,399. **Superballoon Tire Building Core.** J. S. Ward, Akron, O., assignor to Wingfoot Corp., Wilmington, Del.
- 1,952,421. **Vulcanizing Apparatus.** H. H. Chassagne, Akron, O., assignor to Wingfoot Corp., Wilmington, Del.
- 1,952,469. **Tire Tread Strip Machine.** R. W. Snyder and J. I. Haase, both of Akron, O., assignors to Wingfoot Corp., Wilmington, Del.
- 1,952,470. **Inner Tube Apparatus.** W. Stephens, Akron, O., assignor, by mesne assignments, to Wingfoot Corp., Wilmington, Del.
- 1,952,523. **Compression Tester.** F. D. Abbott, assignor to Firestone Tire & Rubber Co., both of Akron, O.
- 1,952,528 and 1,952,529. **Article Mold.** B. Bedford, Trenton, N. J.
- 1,952,556. **Tacky Material Treater.** W. C. MacFarlane, South Gate, Calif., assignor to Xylos Rubber Co., Akron, O.
- 1,952,904. **Reeling Apparatus.** H. C. Bostwick, assignor to Akron Standard Mold Co., both of Akron, O.
- 1,952,905. **Tire Machine Bead Setter.** H. C. Bostwick, assignor to Akron Standard Mold Co., both of Akron, O.
- 1,952,935. **Dipped Glove Form.** H. C. Miller, Waterbury, assignor to Naugatuck Chemical Co., Naugatuck, both in Conn.
- 1,953,215. **Footwear Assembling Conveyor.** E. H. Clark, Reading, assignor to American Rubber Co., E. Cambridge, both in Mass.
- 1,953,255. **Footwear Assembling Conveyor.** E. L. Patten, New Haven, Conn., assignor to American Rubber Co., E. Cambridge, Mass.
- 1,953,256. **Article Assembling Conveyor.** E. L. Patten, New Haven, assignor to Goodyear's India Rubber Glove Mfg. Co., Naugatuck, both in Conn.
- 1,953,295. **Chewing Gum Mixer.** F. A. Garbutt, Los Angeles, Calif.
- 1,953,569. **Joint Waterproof Band Applier.** L. J. Sagit, Paris, assignor to Paix & Cie, Douai, both in France.
- 1,953,721. **Temperature Controller.** R. E. Olson and C. D. De Mers, assignors to Taylor Instrument Cos., all of Rochester, N. Y.
- 1,953,799. **Fabric Impregnating Apparatus.** H. M. Eaton, Swampscott, Mass., assignor to McClellan Shoe Specialty Co., Kennett Square, Pa.

- 1,953,923. **Humidity Controller.** G. W. Bulley, Akron, O.
- 1,953,932. **Traveling Knife.** W. H. Fowle, Woburn, Mass., and E. T. Ickes, Pittsburgh, Pa., assignors to J. L. Fowle Co., Woburn, Mass.
- 1,953,992. **Golf Ball Marker.** H. M. Seagers, assignor to Hulse Mfg. Co., both of Geneva, N. Y.
- 1,954,031. **Tire Spreader.** C. E. Wood, Highland, N. Y.
- 1,954,229. **Ball Freezer and Dispenser.** C. R. Sibley, Marblehead, and A. F. Pym, Beach Bluff, assignors to Sibley-Pym Corp., Lynn, all in Mass.
- 1,954,300. **Tire Spreader.** H. A. Sorum, Shelby, Mont.
- 1,954,483. **Flexure Tester.** S. Krall, Longmeadow, assignor to Fisk Rubber Co., Chicopee Falls, both in Mass.
- 1,954,499. **Tensioning Device.** E. Snyder and G. W. Kierspe, both of Ft. Wayne, Ind., assignors to General Cable Corp., New York, N. Y.
- 1,954,764. **Tire Building Core.** G. W. Anderson, assignor to General Tire & Rubber Co., both of Akron, O.
- 1,955,281. **Bias Cutter.** P. Gardner, New York, and H. Gerstein, Arverne, assignors to Lever Bias Machine Corp., Brooklyn, all in N. Y.
- 1,955,282. **Bias Cutter and Wind-up Apparatus.** P. Gardner, New York, and H. Gerstein, Arverne, assignors to Lever Bias Machine Corp., Brooklyn, all in N. Y.
- 1,955,395. **Electric Tire Groover.** L. D. Tueth, Philadelphia, Pa.
- 1,955,581. **Belt Measurer.** C. C. Gates, Denver, Colo.

Dominion of Canada

- 340,359. **Ball Mold.** W. Kay, Bury, England.
- 340,412. **Tire Building Core.** General Tire & Rubber Co., assignee of G. W. Anderson, both of Akron, O., U. S. A.
- 340,417. **Cylinder Trimmer.** Ideal Roller & Mfg. Co., Inc., Chicago, assignee of W. A. Lippincott, Oak Park, both in Ill., U. S. A.
- 340,427. **Die Casting Apparatus.** Lightning Fastener Co., Ltd., St. Catharines, Ont., assignee of G. H. C. Corner, Birmingham, England.
- 340,434. **Continuous Wire Vulcanizer.** Northern Electric Co., Ltd., Montreal, P. Q., assignee of J. R. Pheazey, Hyogo-ken, Japan.
- 340,472. **Vulcanizing Apparatus.** Western Electric Co., Inc., New York, N. Y., assignee of L. F. Lamplough, Baltimore, Md., both in the U. S. A.
- 340,605. **Latex Concentrator.** Metallgesellschaft A. G., assignee of A. E. Petersen, both of Frankfurt a. M., and W. Gensecke, Gonsenheim, co-inventors, all in Germany.
- 340,655. **Tire Retreader.** A. E. Burch and F. W. Smith, co-inventors, both of Moonee Ponds, Victoria, Australia.
- 340,771. **Fabric Centering Apparatus.** Goodyear Tire & Rubber Co., assignee of J. P. Griggs, both of Akron, O., U. S. A.

- 340,932. **Gasket Applying Mechanism.** Continental Can Co., Inc., New York, assignee of C. J. Aulbach, Syracuse, both in N. Y., U. S. A.

United Kingdom

- 402,872. **Tire Groover.** H. F. Scruby, Los Angeles, Calif., U. S. A.
- 402,946. **Colloid Mill.** International Latex Processes, Ltd., St. Peter's Port, Channel Islands, assignee of A. Szegvari, Akron, O., U. S. A.
- 403,015. **Conveyer Belt Calender.** A. Abrahamsen and J. E. Hansen, both of Lillesand, Norway.
- 403,175. **Mattress Making Machine.** B. F. Goodrich Co., New York, N. Y., U. S. A.
- 403,296. **Tire Regroover.** W. Shepherd, Ormskirk, (R. Shepherd, Portland, Ore., U. S. A.)
- 403,575. **Dental Flask.** C. E. Denney and A. J. Wakelin, both of Brighton.
- 403,717. **Tire Groover.** H. F. Scruby, Los Angeles, Calif., U. S. A.
- 404,680. **Extensible Thread Tester.** Dunlop Rubber Co., Ltd., London, and E. A. Murphy and R. G. James, both of Birmingham.
- 404,681. **Thread Delivering Device.** Dunlop Rubber Co., Ltd., London, and E. A. Murphy and R. G. James, both of Birmingham.

Germany

- 594,122. **Bias Strip Cutter.** Deutsche Dunlop Gummi-Co., A. G., Hanau a. Main.
- 594,518 and 594,519. **Comb Cutter.** C. Tober, Berlin-Karlshorst.
- 595,795. **Tire Pressure Indicator.** E. Woerner, Feuerbach i. Württbg.
- 596,346. **Divided Receptacle Vulcanizers for Curing Porous Rubber Balls with Closed Cells.** Societe Belge du Caoutchouc Mousse, Brussels, Belgium. Represented by T. von Laczay, Berlin.
- 596,427. **Electric Controller for Twin Tires.** F. Schwen, Berlin.

PROCESS

United States

- 1,951,377. **Forming Gloves.** D. F. Twiss, Wyde Green, and E. A. Murphy, Birmingham, assignors to Dunlop Rubber Co., Ltd., Birmingham, all in England.
- 1,951,378. **Producing Articles from Plastics.** D. F. Twiss and E. A. Murphy, both of Wyde Green, assignors to Dunlop Rubber Co., Ltd., London, all in England.
- 1,951,392. **Ball.** S. M. Cadwell, Grosse Pointe, Mich., assignor to Revere Rubber Co., Providence, R. I.
- 1,951,618. **Rubber Sponge.** H. Lindemann, Berlin, Germany.
- 1,951,620. **Decalcomania Paper.** J. MacLaurin, Ware, Mass.
- 1,952,038. **Extruding Sheet Material.** A. C. Fischer, Chicago, Ill., assignor to Philip Carey Mfg. Co., a corporation of O.
- 1,952,163. **Upholstery Article.** W. G.

- Gorham, Birmingham, assignor to Dunlop Rubber Co., Ltd., London, both in England.
- 1,952,417. **Cleaning Metal Molds.** W. H. Chandler, Shaker Heights, O.
- 1,952,446. **Elastic Wheel.** E. F. Maas, Cuyahoga Falls, O., assignor to Wingfoot Corp., Wilmington, Del.
- 1,952,468. **Automobile Trim Material.** A. J. Smith, Detroit, Mich.
- 1,952,628. **Footwear.** F. J. MacDonald, Brookline, Mass., assignor, by mesne assignments, to Hood Rubber Co., Inc., Wilmington, Del.
- 1,952,731. **Shoe.** C. M. Riddock, Boston, Mass.
- 1,953,150. **Separating Rubber and Fiber.** A. W. Bull, assignor to Rubber Regenerating Co., both of Naugatuck, Conn.
- 1,953,750. **Retreading Tires.** C. H. Dacon and V. Stults, assignors to St. Louis Tire Retreading Machine Co., all of St. Louis, Mo.
- 1,953,901. **Adhesive Tape.** P. F. Ziegler, Evanston, Ill., assignor to Kendall Co., Boston, Mass.
- 1,953,946. **Affixing Stamps.** E. B. Bengier, assignor to E. I. du Pont de Nemours & Co., Wilmington, Del.
- 1,953,983. **Abrasive Article.** R. C. Benner, assignor to Carborundum Co., both of Niagara Falls, N. Y.
- 1,953,984. **Abrasive Article.** H. C. Martin, assignor to Carborundum Co., both of Niagara Falls, N. Y.
- 1,954,926. **Tire.** W. J. Fraser, Toronto, Ont., Canada.
- 1,954,960. **Joining Thermoplastic Insulation.** E. Studt, Nordenham-on-the-Weser, Germany, A. R. Kemp, Westwood, N. J., and F. S. Malm, Chicago, Ill.; said Studt, assignor to Felten & Guillaume Carlswerk A. G., Cologne-Mulheim, Germany, and said Kemp and Malm, assignors to Bell Telephone Laboratories, Inc., New York, N. Y.
- 1,955,720. **Boot and Shoe.** H. Rollmann, Cologne-Marienburg, Germany.

Dominion of Canada

- 340,357. **Sole or Heel.** W. Kay, Bury, England.
- 340,358. **Shoe.** W. Kay, Bury, England.
- 340,425. **Ball.** International Latex Processes, Ltd., St. Peter's Port, Channel Islands, assignee of G. W. Trobridge, E. A. Murphy, and A. S. King, co-inventors, all of Birmingham, England.
- 340,428. **Sliding Fastener.** Lightning Fastener Co., Ltd., St. Catharines, Ont., assignee of W. J. S. Naunton, Manchester, England.
- 340,653. **Impregnating Textiles with Latex.** J. E. C. Bongrand, Paris, and L. S. M. Lejeune, Nord, co-inventors, both in France.
- 340,775. **Inner Tube.** Goodyear Tire & Rubber Co., assignee of W. Stephens, deceased, both of Akron, O., U. S. A.
- 340,935. **Bottle Cap.** Crown Cork & Seal Co., Inc., assignee of A. H. Warth, both of Baltimore, Md., U. S. A.
- 340,944. **Tire.** Firestone Tire & Rubber Co. of Canada, Ltd., Hamilton, Ont., assignee of C. G. Hoover, Akron, O., U. S. A.

United Kingdom

- 402,364. **Rubber Thread.** R. F. McKay, Birmingham. (Latex Processes,

- Ltd., St. Peter's Port, Channel Islands.)
- 403,375. **Upholstering Material.** Anode Rubber Co., Ltd., St. Peter's Port, Channel Islands, assignee of Magyar Ruggyantaarugyar Reszvenytarsasag, Budapest, Hungary.
- 403,556. **Coated Fabric.** Magyar Ruggyantaarugyar Reszvenytarsasag, Budapest, Hungary.
- 403,858. **Artificial Leather.** R. Muller, Milan, Italy.
- 404,001. **Proofing Ropes and Cords.** W. H. Wilkinson, Leith, Scotland, and D. P. Frost, F. Smith, and British Ropes, Ltd., all of London.

Germany

- 594,436. **Vulcanizing Cellular Rubber Bands.** Societe Belge du Caoutchouc Mousse, Berchem-Ste. Agathe, Belgium.
- 595,375. **Impregnating Fabrics.** Consortium fur Elektrochemische Industrie G.m.b.H., Munich.

CHEMICAL

United States

- 1,952,041. **Crumb-Like Composition.** E. A. Murphy, Birmingham, and D. F. Twiss, Wyde Green, both in England, assignors to Dunlop Rubber Co., Ltd., a British corporation.
- 1,952,706. **Rubber-Bituminous Composition.** A. C. Fischer, Chicago, Ill.
- 1,952,886. **Pigment.** W. J. O'Brien, Shaker Heights, O.
- 1,952,923. **Cable Insulation.** F. R. Kaimer, York, Pa., assignor to General Electric Co., a corporation of N. Y.
- 1,953,104. **Adhesive.** W. H. Charch, Buffalo, W. L. Hyden, Kenmore, and T. G. Finzel, Buffalo, assignors to Du Pont Cellophane Co., Inc., New York, all in N. Y.
- 1,953,169. **Synthetic Rubber.** W. A. Gibbons, Montclair, N. J., and E. M. McCollm, Asahan, Sumatra, D. E. I., assignors to Naugatuck Chemical Co., Naugatuck, Conn.
- 1,953,440. **Insulation.** W. S. Smith, Benchams, H. J. Garnett, Solefields, J. N. Dean, Orpington, B. J. Habgood, Bournemouth, and H. C. Channon, London, all in England.
- 1,953,494. **Accelerator.** H. Meis, Leverkusen a. Rhine, assignor to I. G. Farbenindustrie A. G., Frankfurt a. M., both in Germany.
- 1,953,972. **Composition.** E. A. Murphy and A. Niven, both of Birmingham, and D. F. Twiss, Wyde Green, all in England, assignors to Dunlop Rubber Co., Ltd., a British corporation.
- 1,954,377. **Age Resister.** W. S. Calcott and W. A. Douglass, both of Penns Grove, N. J., assignors to E. I. du Pont de Nemours & Co., Wilmington, Del.
- 1,954,394. **Welding Rod Composition.** L. A. Meisse, assignor to Ohio Brass Co., both of Mansfield, O.
- 1,955,068. **Synthetic Rubber.** H. Hopff, Ludwigshafen a. Rhine, and E. Kuehn, Mannheim, assignors to I. G. Farbenindustrie A. G., Frankfurt a. M., all in Germany.

Dominion of Canada

- 340,445. **Paper Manufacture.** Raffold International Corp., assignee of H. R. Rafton and A. M. Brooks, co-inventors, all of Andover, Mass., U. S. A.

- 340,754. **Accelerator.** Dominion Rubber Co., Ltd., Montreal, P. Q., assignee of L. Meuser and P. J. Leaper, co-inventors, both of Naugatuck, Conn., U. S. A.
- 340,764. **Chlorinated Rubber Composition.** I. G. Farbenindustrie A. G., Frankfurt a. M., assignee of G. Meyer, Koln-Mulheim a. Rhine, both in Germany.
- 340,770. **Antioxidant.** Goodyear Tire & Rubber Co., Akron, assignee of A. M. Clifford, Stow, both in O., U. S. A.
- 340,772, 340,773, and 340,774. **Accelerator.** Goodyear Tire & Rubber Co., Akron, assignee of W. P. Ter Horst, Silver Lake, both in O., U. S. A.

United Kingdom

- 402,454. **Chlorinated Rubber.** W. D. Spencer, Liverpool, and Imperial Chemical Industries, Ltd., London.
- 402,810. **Dry Pulverulent Composition.** Gypsum Mines, Ltd., and R. Collins, both of Sussex.
- 402,811. **Cement-Rubber Composition.** N. Swindin, Wealdstone.
- 402,925. **Rubber Hydrogenation.** J. Y. Johnson, London. (I. G. Farbenindustrie A. G., Frankfurt a. M., Germany.)
- 402,982. **Fibrous Rubber Composition.** H. Jackson, Garstang.
- 403,141 and 403,142. **Rubber Composition.** Dunlop Rubber Co., Ltd., London, and D. F. Twiss and J. A. Wilson, both of Birmingham.
- 403,394. **Latex for Silk Stockings.** Naugatuck Chemical Co., Naugatuck, Conn., assignee of M. C. Teague, Jackson Heights, and N. H. Brewster, Brooklyn, both in N. Y., all in the U. S. A.
- 403,480. **Accelerator.** A. Skipsey, St. Albans.
- 403,502. **Rubber Composition.** Siemens & Halske A. G., Berlin, Germany.
- 403,726. **Golf Ball Surface Finish.** Dunlop Rubber Co., Ltd., London, and D. F. Twiss and F. A. Jones, both of Birmingham.
- 403,735. **Golf Ball Center.** India Rubber, Gutta Percha, & Telegraph Works Co., Ltd., and W. J. Perry, both of London.
- 403,750. **Accelerator.** J. Y. Johnson, London. (I. G. Farbenindustrie A. G., Frankfurt a. M., Germany.)
- 404,041. **Latex Paint.** J. Y. Johnson, London. (I. G. Farbenindustrie A. G., Frankfurt a. M., Germany.)

Germany

- 594,520. **Vulcanizing Process.** Naugatuck Chemical Co., Naugatuck, Conn., U. S. A. Represented by C. Wiegand, Berlin.
- 595,727. **Condensation of Latex.** Metallgesellschaft A.G., Frankfurt a. M.
- 596,545. **Accelerator.** I. G. Farbenindustrie A.G., Frankfurt a. M.

GENERAL

United States

- 1,951,450. **Pajama Garment.** G. Y. Sochel, Asbury Park, N. J., assignor to Steiner Liberty Corp., Baltimore, Md.
- 1,951,460. **Valve Stem.** S. T. Williams, Forest Hills, and J. Wahl, Rosedale, assignors to A. Schrader's Son, Inc., Brooklyn, all in N. Y.
- 1,951,529. **Paper Cutting Roller.** W. H. Possnett, Stockport, England.

1,951,565. **Valve.** W. A. Sonnett, Cincinnati, O.
 1,951,610. **Collapsible Tube Closure.** A. M. Hennen, Spokane, Wash.
 1,951,777. **Floral Spray Flower Preserver.** E. J. Siegler and W. Gear, Jr., both of Cincinnati, O.
 1,951,924. **Bottle Stopper.** D. E. Clark, Ashland, O.
 1,951,937. **Surgical Belt.** C. M. Judd, Rochester, Minn.
 1,951,975. **Air Chamber Heel.** G. W. Griffith, assignor to Pneumatic Rubber Heel Corp., both of New York, N. Y.
 1,952,065. **Running Board.** H. D. Geyer, Dayton, O., and R. J. Waterbury, Detroit, Mich., assignors to Inland Mfg. Co., Dayton, O.
 1,952,114. **Friction Material.** C. T. Begg, assignor to Raybestos-Manhattan, Inc., both of Bridgeport, Conn.
 1,952,115. **Automobile Shackle.** A. J. Brost, Jr., Buffalo, N. Y.
 1,952,164. **Puncture or Low Pressure Tire Signal.** W. L. Goyett, Canon City, Colo.
 1,952,191. **Submergible Cable.** A. Arutunoff, Tulsa, Okla.
 1,952,213. **Catamenial Garment.** M. Myer, New York, N. Y.
 1,952,221. **Inner Tube.** O. R. Ronneberg, Minneapolis, Minn.
 1,952,293. **Safety Device.** W. Spengler, Brooklyn, N. Y.
 1,952,302. **Rubber Stamp Mount.** S. M. Weissman, assignor to S. M. Weissman and F. F. Crawford, all of Chicago, Ill., co-partners doing business as Bankers & Merchants Stamp Works.
 1,952,309. **Vehicle Top.** R. G. Brockway, Grosse Pointe Village, and A. J. Smith, Detroit, assignors to St. Clair Rubber Co., Detroit, all in Mich.
 1,952,424. **Sealing Ring.** R. B. Day, Akron, O., assignor to Wingfoot Corp., Wilmington, Del.
 1,952,427. **Sealing Ring.** R. D. Evans, Akron, O., assignor to Wingfoot Corp., Wilmington, Del.
 1,952,465. **Sleeping Bag.** G. E. Rycroft, Waban, Mass.
 1,952,473. **Footwear.** J. E. Taber, South Bend, assignor to Mishawaka Rubber & Woolen Mfg. Co., Mishawaka, both in Ind.
 1,952,602. **Furniture Leg Shoe.** R. E. Miller, Bronxville, N. Y.
 1,952,625. **Egg Cleaner.** G. E. Johnson, New York, N. Y.
 1,952,660. **Jar Opener.** G. B. Dryden, Evanston, assignor to Dryden Rubber Co., Chicago, both in Ill.
 1,952,695. **Composite Grommet.** E. F. Webb, Highland Park, and R. C. Sanders, Detroit, assignors to Chrysler Corp., Detroit, all in Mich.
 1,952,766. **Sound Absorbing Material.** J. Mazer, Upper Darby Township, Pa.
 1,952,934. **Belt.** J. H. Matthews, Nutley, assignor to Raybestos-Manhattan, Inc., Passaic, both in N. J.
 1,952,939. **Electric Switch.** C. Porter, Madison, S. Dak.
 1,952,958. **Motor Vehicle Stabilizer.** P. Wilmart, Brussels, Belgium.
 1,953,093. **Friction Top Can.** J. M. Young, Brooklyn, assignor to American Can Co., New York, both in N. Y.
 1,953,166 and 1,953,167. **Freezing Tray.** H. D. Geyer, assignor to Inland Mfg. Co., both of Dayton, O.
 1,953,168. **Ice Cream Cabinet Protec-**

tion Plate. H. D. Geyer, assignor to Inland Mfg. Co., both of Dayton, O.
 1,953,211. **Flexible Elastic Coupling.** E. Benedek, assignor to Hydraulic Press Mfg. Co., Mt. Gilead, O.
 1,953,224. **Sole Press.** G. Hazelton, Leicester, England, assignor to United Shoe Machinery Corp., Paterson, N. J.
 1,953,281. **Horseshoe.** A. Veran, Avignon, France.
 1,953,466. **Blood Pressure Apparatus.** B. F. Corwin, Brooklyn, N. Y.
 1,953,495. **Antiskid Chain Cross Member.** J. R. Nargi, assignor of 1/2 to M. Nargi, both of Bridgeport, Conn.
 1,953,517. **Ear Water Shield.** I. A. Swan, Seattle, Wash.
 1,953,518. **Lawn Sprinkler.** E. J. Sweetland, Piedmont, Calif.
 1,953,604. **Golf Club.** P. E. Heller, Newark, N. J.
 1,953,798. **Bath Cushion.** B. de Grandcourt, Norwalk, Conn.
 1,953,877. **Vehicle Glare Shield.** H. B. Chase, Ithaca, N. Y.
 1,953,893. **Cable.** P. H. Chase, Bala-Cynwyd, Pa.
 1,954,122. **Boot.** J. M. Fiori, Poughkeepsie, N. Y.

Dominion of Canada

340,364. **Game Practicing Device.** E. E. N. McCallum, Victoria, B. C.
 340,365. **Vacuum Cleaner.** A. Morris, London, England.
 340,366. **Golf Bag.** J. M. Nahon, Madrid, Spain.
 340,379. **Foot Arch Supporter.** H. L. Whitman, Bridgewater, Mass., U. S. A.
 340,436. **Running Board.** Ohio Rubber Co., Cleveland, assignee of G. F. Cavanagh, Euclid, both in O., U. S. A.
 340,476. **Storage Battery.** Willard Storage Battery Co., Cleveland, assignee of S. W. Rolph, Cleveland Heights, both in O., U. S. A.
 340,494. **Baby Garment.** B. S. Alsop, Scarsdale, N. Y., U. S. A.
 340,535. **Undergarment.** Stanfield's, Ltd., assignee of O. E. Rohn, both of Truro, N. S.
 340,541 and 340,542. **Window Sash.** Adlake Co., Chicago, Ill., assignee of W. S. Hamm, Elkhart, Ind., both in the U. S. A.
 340,552. **Printing Press Blanket.** Behr-Manning Corp., assignee of E. C. Schacht, both of Troy, N. Y., U. S. A.
 340,578. **Bathing Suit.** Dominion Rubber Co., Ltd., Montreal, P. Q., assignee of J. J. Gallican and W. J. Robinson, co-inventors, both of Providence, R. I., U. S. A.
 340,650. **Toothbrush.** D. M. and Z. T. Coney, co-inventors, both of San Francisco, Calif., U. S. A.
 340,682. **Child's Suit.** J. W. Grant, Outremont, P. Q.
 340,685. **Collapsible Tube Closure.** A. M. Hennen, Spokane, Wash., U. S. A.
 340,747. **Teat Cup.** De Laval Separator Co., New York, assignee of J. L. Hulbert, Poughkeepsie, both in N. Y., U. S. A.
 340,753. **Tire Stem.** Dill Mfg. Co., Cleveland, assignee of A. P. Williamson, Shaker Heights, both in O., U. S. A.
 340,789. **Brassiere.** Maiden Form Brassiere Co., Inc., assignee of W. Rosenthal, both of New York, N. Y., U. S. A.
 340,794. **Treadle.** National Pneumatic Co., New York, N. Y., assignee of

R. D. Conklin, Rahway, N. J., both in the U. S. A.
 340,818. **Textile Fabric.** United States Rubber Co., New York, assignee of P. Adamson, Rye, both in N. Y., U. S. A.
 340,838. **Fly Swatter.** W. W. Lillard, Midland Park, N. J., U. S. A.
 340,847. **Tire Casing Expansion Closure.** O. J. Ribarsch and A. T. Hill, co-inventors, both of Montreal, P. Q.
 340,988. **Corset.** Charis, Ltd., Toronto, Ont., assignee of Charis Corp., assignee of J. Leonard, both of Allentown, Pa., U. S. A.
 341,001. **Corset.** La Resistia Corset Co., assignee of G. E. Hawes, both of Bridgeport, Conn., U. S. A.

United Kingdom

401,424. **Boot Fastening.** J. Staude, Gross-Schönau, Czechoslovakia, and F. A. Petzold, Herzogenrath, Germany.
 401,572. **Corset.** F. W. Gozna and Empire Corset Co., Ltd., both of London.
 401,847. **Boot Protector.** A. Mackintosh, Letchworth.
 402,095. **Boot.** W. L. and G. A. Hill, (trading as J. Sutliff), and H. Hollingworth, all of Leicester.
 402,216. **Bathing Cap.** T. J. Brooks, Berkeley.
 402,270. **Fruit Stoner.** G. Frova, Milan, Italy.
 402,287. **Annular-Track Rail Wheel.** Austro Daimler-Puchwerke A. G., Vienna, Austria.
 402,334. **Garment Elastic Waistband.** Mauser-Werke A. G., Oberndorf, Germany.
 402,353. **Siphon Bottle.** E. Fernholz, Berlin, Germany.
 402,356. **Necktie.** F. H. and E. Tesch, both of Hanover, Germany.
 402,372. **Surgical Apparatus.** R. Vogel and J. H. Lind, both of Hamburg, Germany.
 402,527. **Hot Water Bottle.** India Rubber, Gutta Percha & Telegraph Works Co., Ltd., and B. Walkley, both of London.
 402,528. **Footwear.** St. Helens Cable & Rubber Co., Ltd., and H. Evans, both of Slough.
 402,705. **Draught Excluder.** International Latex Processes, Ltd., St. Peter's Port, Channel Islands, assignee of Magyar Ruggyantaarugyar Reszvenytarsasag, Budapest, Hungary.
 402,789. **Clothes Washer.** T. M. Elfving, Stockholm, Sweden.
 402,812. **Corset.** L. M. Jacks, London.
 402,848. **Grain Treater.** E. Satake, Osaka, Japan.
 402,854. **Grinding Mill.** J. J. C. Brand and L. St. J. Colley, both of London.
 402,873. **Paper Crimper.** T. L. Harborne, Weston-super-Mare.
 402,906. **Tennis Court Marking Strip.** Dunlop Rubber Co., Ltd., London, and A. Lakeman, Birmingham.
 402,944. **Inkwell.** Siebert & Lowen, both of Elberfeld, Germany.
 402,967. **Electrolytic Condenser.** Naamloze Vennootschap Philips' Gloeilampenfabrieken, Eindhoven, Holland.
 402,976. **Bottle Capper.** O. J. Bruun, Frederiksberg, Denmark.
 403,006. **Tractor Double Wheel Device.** R. Helbling, St. Gall, Switzerland.
 403,050. **Boot Making Machine.** Schon & Cie., A. G., Pirmasens, Germany.

- 403,074. **Cable.** Croydon Cable Works, Ltd., and J. H. C. Brooking, both of Croydon.
- 403,097. **Draught Excluder.** E. A. Pavén, Marne, France.
- 403,103. **Strainer.** E. & M. Lamort Fils, Marne, France.
- 403,151. **Driving Belt.** W. E. Wright and Fleming, Birkby & Goodall, Ltd., both of Halifax.
- 403,153. **Child Carrier.** W. E. P. Rose, London.
- 403,160. **Tire Pressure Gage.** L. E. V. J. Henry, Seine, France.
- 403,161. **Shock Absorbing Steering Wheel.** W. W. Hamill, Four Oaks.
- 403,195. **Cycle Saddle.** Douglas Motors (1932), Ltd., and C. G. Pullin, both of Bristol.
- 403,208. **Discharge Lamp.** N. Lebedenko and R. Levy, both of Wilmersdorf, and W. Zeitlin, Berlin, Germany.
- 403,219. **Powder Box.** P. Wurzbürger, Paris, France.
- 403,250. **Roller Skate.** P. Bottcher, Freiberg, and B. Ullman and K. Heinze, both of Saxony, all in Germany.
- 403,259. **Waterproof Garment.** A. Levy, Manchester.
- 403,262. **Rail or Road Vehicle.** Soc. Anon. Des Pneumatiques Dunlop, Paris, and A. Talon, Seine, both in France.
- 403,281. **Cobalt Electrodeposition.** British Thomson-Houston Co., Ltd., London, assignee of Soc. Generale de Constructions Electriques et Mecaniques (Als-Thom), Paris, France.
- 403,323. **Electric Lamp Cap.** British Thomson-Houston Co., Ltd., London, assignee of R. F. Strickland, Cleveland Heights, O., U. S. A.
- 403,326. **Trouser Pocket Safety Device.** R. E. Caradine, Cambridge.
- 403,337. **Artificial Foot Ankle Joint.** E. D. Mascau, Rouen, France.
- 403,370. **Aircraft Drift Indicator.** H. Gatty, Ocean Park, Calif., U. S. A.
- 403,371. **Cable.** C. J. Beaver and N. Dixon, both of Cheshire, and W. T. Glover & Co., Ltd., Manchester.
- 403,412. **Spinning Machine Roller.** A. S. Lowry, Cheshire.
- 403,418. **Brassiere.** L. M. Jacks, London.
- 403,419. **Universal Joint.** H. Kattwinkel, Coswig, Germany.
- 403,427. **Flashlight Lamp.** J. F. Crowley, London.
- 403,442. **Watering Can.** W. Sever, Bramhope.
- 403,467. **Table Game.** K. C. G. De Vall, Birmingham.
- 403,494. **Wringer.** Acme Wringers, Ltd., and J. W. Burt, both of Glasgow, Scotland.
- 403,500. **Tire.** A. L. Seabra, Sao Paulo, Brazil.
- 403,549. **Hair Waver.** M. Calderon, London.
- 403,553. **Railway Wheel Tire.** E. Bugatti, Bas-Rhin, France.
- 403,555. **Roller.** Soc. Italiana Pirelli, Milan, Italy.
- 403,557. **Tire Pressure Valve.** G. Ezelent, Paris, France.
- 403,579. **Tire.** Soc. Italiana Pirelli, Milan, Italy.
- 403,637. **Flashlight Lamp.** J. F. Crowley, London.
- 403,652. **Mop.** W. Haslam, Blackburn.
- 403,673. **Spring.** Firestone Tyre & Rubber Co., Ltd., Brentford. (Firestone Tire & Rubber Co., Akron, O., U. S. A.)
- 403,702. **Showcase.** A. Ansell, London.
- 403,715. **Vehicle Door.** F. and F. W. Kiekert, (trading as A. Kiekert Sohne), both of Rhineland, Germany.
- 403,721. **Filter Apparatus.** M. Wilderman, Monte Carlo, Monaco.
- 403,777. **Hair Waver.** W. Ward, Blackpool.
- 403,782. **Tramway Vehicle Undercarriage.** W. E. Hall, Loughborough.
- 403,856. **Universal Joint.** L. Thiry, Huy, Belgium.
- 403,859. **Lift Valve.** B. Hofinger, Berlin, Germany.
- 403,896. **Gastroscope.** G. Wolf Ges., Berlin, Germany.
- 403,902. **Automobile Fender Wrapper.** International Latex Processes, Ltd., St. Peter's Port, Channel Islands.
- 404,025. **Wireless Apparatus.** Marconi's Wireless Telegraph Co., Ltd., London, and T. H. Price, Chelmsford.
- 404,062. **Artificial Thread Apparatus.** Viscose Co., Marcus Hook, Pa., U. S. A.
- 404,200. **Cupping Appliance.** F. Itting, Thuringia, Germany.
- 404,227. **Yarn.** C. F. Hansen, Oslo, and E. Meier, Skoyen, both in Norway.
- 404,235. **Skin Treater.** M. L. Spengler, Siegen, Germany.
- 404,282. **Cask Racking Cock.** P. W. Norman, Carshalton.
- 404,322. **Ball Cleaner.** D. Wilkins, Pinner.
- 404,406. **Arch Support.** A. N. Weaver, London, and H. Legge, Frinton-on-Sea.
- 404,433. **Map.** B. K. O. Lundberg, Linköping, Sweden.
- 404,564. **Specific Gravity Estimator.** L. Edelmann, Chicago, Ill., U. S. A.
- 404,645. **Bobbin.** A. S. Lowry, Cheshire.

Germany

- 594,028. **Conical Valve for Air Pumps.** O. Koch, Stahnsdorf, Kr. Teltow.
- 594,254. **Double Valve for Tubes.** A. Ahlers, Mainz.
- 594,772. **Spring.** Continental Gummi-Werke A. G., Hannover.
- 594,792. **Rail Tire.** Continental Gummi-Werke A. G., Hannover.
- 595,282. **Rubber and Leather Sole.** Maschinenwerke zu Frankfurt a. M., vorm. Kolb, Rieber & Co., G.m.b.H., Frankfurt a. M.
- 595,917. **Pneumatic Tire Tread.** E. Coenning, Berlin-Halensee.
- 596,080. **Harness with Sponge Rubber Cushioning.** C. C. Moignard and A. S. Stein, both of Paris, France. Represented by A. Spreer, Leipzig.
- 596,085. **Disk Wheel.** F. A. Löffler, Köln a. Rh.
- 596,187. **Glass Cleaner.** H. Stroms, Gerderath, Erkelenz-Land.
- 596,557. **Pneumatic Disk Wheel.** W. Neu, Hemmerden i. Rhld., and W. Forster, Juchen i. Rhld.

TRADE MARKS

United States

- 310,345. **D-R.** Rubberized cord and fabric belts. Dayton Rubber Mfg. Co., Dayton, O.
- 310,352. **Scotch Flyer.** Golf balls. Golf Ball, Inc., Chicago, Ill.
- 310,386. **Tite-Pac.** Jar rings. Jenkins Bros., New York, N. Y.
- 310,424. **Tetratex.** Prophylactic rubber goods. Akron Drug & Sundries Co., Akron, O.
- 310,499. **Para-Lastik.** Rubber cement.

W. A. Sheaffer Pen Co., Ft. Madison, Iowa.

- 310,533. Diamond-shaped label containing the words: "**A Curatex Product**," and below the label the words: "**Trade Mark**." Compound latex sold as an adhesive. American Curatex Corp., Quincy, Mass.
- 310,586. **Dr. Nebb's.** Druggists' sundries. Niesner Bros., Inc., Rochester, N. Y.
- 310,601. **Up-Tilt.** Combs. W. Ehlers, doing business as Schrader & Ehlers, New York, N. Y.
- 310,701. Representation of a fanciful design containing the words: "**Wiseman**," written horizontally and vertically, and "**W-W Products**." Dental supplies including sanitary rubber cups. Wiseman Bros. Specialty Co., San Francisco, Calif.
- 310,738. **DP Inc.** Rubber dispersed in a water medium. Dispersions Process, Inc., New York, N. Y.
- 310,808. **Pinsele.** Footwear. Firestone Footwear Co., Hudson, Mass.
- 310,811. **Korkrepe.** Soles. United States Rubber Co., New York, N. Y.
- 310,861. **Sentinel.** Tires, tubes, repair kits, patches, and patching gum. Firestone Tire & Rubber Co., Akron.
- 310,904. **A Tarzan Product.** Combs, etc. Edgar Rice Burroughs, Inc., Tarzana, Calif.
- 310,905. **Penrich.** Lubricating oil, B. F. Goodrich Co., New York, N. Y.
- 310,940. **Redo - Swade.** Rubberized fabrics. Reading Rubber Mfg. Co., Reading, Mass.
- 310,951. Label containing representation of a banner and on it the word: "**Cornell**." Cement. The Pep Boys - Manny, Moe & Jack, doing business as Cornell Tire & Rubber Co., Akron, O.
- 310,964. Label consisting of a circle containing a representation of a man on bended knee fastening a garter, and below it the word: "**Paris**." Garters. A. Stein & Co., Chicago, Ill.
- 310,986. **Economy.** Vacuum cleaner belts, etc. Repair Parts & Replacement Co., Chicago, Ill.
- 310,995. Representation of a hose supporter. Hose supporter. Ansonia O & C Co., Ansonia, Conn.
- 310,997. Circular label containing representation of 2 stars and the words: "**All American Wear-U-Well**." Footwear. Wolfe Wear-U-Well Corp., Columbus, O.
- 311,088. Representation of a coat-of-arms and a helmet, and the words: "**Silver Knight**." Prophylactic rubber articles. L. J. McFaddin, Cedar Rapids, Iowa.
- 311,096. **Beautician.** Hard rubber combs. Glemby Co., Inc., New York, N. Y.
- 311,100. **Pneu-Tile.** Floor and table coverings. Republic Rubber Co., Youngstown, O.
- 311,101. **Pneu-Pad.** Padding. Republic Rubber Co., Youngstown, O.
- 311,143. Representation of a shell containing the word: "**Shell**." Inner tubes. Shell Oil Co., San Francisco, Calif.
- 311,161. Circle containing representation of a man wrestling with an ox, and the word: "**Titanox**." Pigments for rubber, etc. Titanium Pigment Co., Inc., New York, N. Y.
- 311,163. **Acme.** Hard rubber combs. American Hard Rubber Co., Hempstead, N. Y.

Market Reviews

CRUDE RUBBER

RESTRICTION arrived at last. It was not, however, the cure-all for low prices it was expected to be. Gains of about 2½¢ followed the first announcement but when details of the plan were revised, the market lost these gains and settled back into a preresstriction pace. The reaction was caused by alteration of the restriction quotas. At first the plan was for 10% restriction in July, 20% in August, 30% in September and the remaining months of the year. Later these percentages were changed to 10% in August, 10% in September, 20% in October, 20% in November, and 30% in December.

Traders took this schedule to mean that little reduction in world stocks could be hoped for this year and the fears of some objectors that the plan would raise prices out of sight were allayed. The delayed cut in output also led to the belief that much rubber would be rushed under the wire before the curtailed figures go into effect on August 1, and the large port and dealers' stocks seem to bear out this theory.

Automobile production was fine for the first weeks in May, but it has started to ease off although it is still far above that of last year. Sales, too, are spotty, with some dealers complaining of excessive stocks.

April consumption of rubber was high, but expectations were for even greater figures than the 44,947 tons reported. Imports were heavy and probably will continue to be until August 1 when the restriction agreement becomes effective.

In the Outside Market business boomed just after the restriction plan was announced, but the later decline found factories overbought; consequently sales tapered off to only a nominal amount.

Starting May 7 the rubber market on the Commodity Exchange, Inc., opened at 10 a. m. instead of 10:10 a. m. as previously. Rules governing the delivery of crude rubber have also been revised. Rule 17 in regard to delivery on dock and payment therefor under terms of the No. 1 standard contract have been amended to include the new provision that "the deliverer shall provide, at his expense, free dockage for at least 2 business days after the date stated for delivery." Members of the exchange last month approved in balloting new by-laws with regard to the recertification of rubber.

Week ended April 28. Rubber prices were generally strong except one day

when sales reached 10,350 long tons. Repeated rumors that restriction would be effective by June or July 1 supported the market in the face of declines. London sold off; while in our market weakness in silver sent prices in stocks and commodities off, including rubber. Recovery was made the next day, but prices eased again on Saturday.

The May position closed at 12.57¢, against 12.39¢ last week; July 12.80 against 12.64; September 13.03 against 12.90; December 13.45 against 13.25; January 13.55 against 13.36; and March 13.75 against 13.57.

After 3 months of controversy a strike of 7,000 workers in the Cleveland plant of Fisher Body Co. and of 3,100 in St. Louis was called this week. The issue is recognition of the American Federation of Labor in Cleveland, and the failure of the company to reemploy 118 men active in union affairs in St. Louis.

A statement by E. F. Fisher of Detroit, Fisher general manager, follows: "The Fisher Body Division of the General Motors Corp. has not recognized the American Federation of Labor local in Cleveland or in any other of its plants. At the request of the Automobile Labor Board our officials in Cleveland granted an informal interview to representatives of the American Federation of Labor with the understanding that the right of the American Federation of Labor to represent our employees in our plant would have to be established with the Automobile Labor Board."

The Standard Statistics Co. estimated April output at 400,000 units, and 1,750,000 for the first 6 months. In the same period last year output was 1,045,000 units and in 1931, 1,640,000. The company also reported that Ford has received orders justifying an increase of 20% over original schedules, owing to the price rise by his competitors.

The Rubber Manufacturers Association reported January production of rubber tires at 3,921,587, an increase of 73.7% over January, 1933; shipments were 3,222,398, or 24% higher; and stocks, 9,684,389 units, a 33.8% increase.

That the automobile industry is improving was shown by the General Motors report for the first quarter. Profits of 63¢ a common share were earned against 11¢ in the 1933 period. Dealer sales were 80,686 units up from 1933. Delays in production in January and February hindered deliveries, but in March an important increase was shown close to demand.

"Notwithstanding this," reported A. P. Sloan, Jr., "there existed during the entire quarter an acute shortage of practically all lines of General Motors cars at distributing points, which prevented the corporation from obtaining its full sales possibilities and capitalizing the competitive strength of its products."

The Outside Market advanced under the expectation of a restriction agreement, but factory buyers did not show the interest dealers predicted. Only a fair amount of business was done, with prices up about ¾¢ on ribbed smoked sheets.

May closed at 12½¢, against 12½¢ the week before; June 13.00 against 12½¢; July-September 13¼¢ against 12½¢; October-December 13½¢ against 13¼¢; and January-March 14.00 against 13½¢.

Week ended May 5. Monday's announcement that rubber restriction had been agreed to at last sent prices up from 2.45 to 2.66¢.

In its final form the agreement, for 5 years, applies to Malaya, the Netherlands, India, Burma, French Indo-China, North Borneo, Sarawak, and Siam. On the insistence of the United States each territory will enact legislation to enforce the agreement. Quotas start at 1,019,000 tons, expand gradually to a maximum increase of 25% in 1938. Regulation instead of restriction will be tried, with a committee determining the percentage of the quota to be exported from each territory at regular intervals.

The purpose of the present scheme will be to "reduce world stocks to a normal figure by adjusting in an orderly manner the supply to demand and to maintain a price that will be reasonably remunerative to efficient producers."

Initial quotas follow: Malaya, 504,000 tons; Dutch East Indies, 352,000; Ceylon, 77,500; India, 6,850; Burma, 5,150; North Borneo, 12,000; Sarawak, 24,000; and Siam, 15,000.

The only objection to the plan was that prices might soar out of sight of present market levels and thus raise finished prices on tires. William de Kraft, vice president and chairman of the finance committee of the United States Rubber Co., thought a maximum price should be set and an adequate supply be assured.

In answer to this criticism, the financial editor of *The Times*, of London, said: "It is premature to say what the international regulation commission will decide, but the declared purpose of the scheme is 'to maintain a fair and

equitable price level which will be reasonably remunerative to efficient producers. Neither the United States Rubber Co. nor any other consumer could count upon continuance of an adequate supply of rubber at an uneconomic price."

At the close May sold at 15.18¢, compared with 12.57 last week; July 15.38 against 12.80; October 15.73 against 13.07; December 15.90 against 13.45; January 16.05 against 13.55; and March 16.26 against 13.75.

In the Outside Market business improved markedly, but dealers reported a lack of shipment offers, and factories were not so active as expected. More definite news was expected on the various quotas.

May-June closed at 15½¢ against 12¾¢; July-September 15¼¢ against 13¼¢; October-December 16¢ against 13½¢; and January-March 16½¢ against 14.00.

Week ended May 12. Under heavy profit taking by speculators, rubber lost ground rapidly and ended about where it had been before the restriction announcement. Traders felt the restriction agreement did not go far enough, and it did not provide for prompt action. The fact that each colonial government must pass laws of its own to restrict exports and the possibility for unrestricted production before the laws are passed have made observers skeptical about results. Feeling in the London market was the same, and a decline there started one here. On Wednesday prices were from 129 to 138 points lower on sales of 14,350 tons, and the week ended 243 to 256 points down.

May was 12.75¢ against 15.18¢; July 12.90 against 15.38; September 13.18 against 15.64; December 13.44 against 15.90; January 13.53 against 16.05; and March 13.70 against 16.26.

One of the proposals voted by the International Rubber Regulation Committee in session in London, which affected sentiment adversely, was a gradual reduction of exports. The committee recommended that a quota for each territory be set to be considered as 100%. The 100% quota would stand for June and July, would drop to 90% in August and September, to 80% in October and November, and 70% in December.

Sales of automobiles seem to have struck a slump. In April, General Motors sent 15,615 more cars to dealers than were sold to consumers. April consumer sales, however, were the company's highest in 3 years: 106,349 units, against 98,174 in March and 71,599 in April, 1933.

Pneumatic casing figures showed shipments of 3,285,013 in February, 43.3% over last year; production was 4,335,092, 85.3% over February, 1933; and casings on hand increased 45.4% to 10,725,032 units.

In the Outside Market, factories bought on the decline caused by the publication of quota figures for the rest of the year. Full production under the quota to August 1 will allow growers to flood the market since the amount permitted is greater than the recent average. Traders thought that rubber would be bullish for a long pull, but not for the present. In London it was estimated that year-end stocks would reach 600,000 tons, against a normal amount of 400,000.

Prices lost all the ground gained last week: May-June closed at 13.00¢ against 15½¢; July-September 13¼¢ against 15¼¢; October-December 13½¢ against 16½¢; and January-March 14.00 against 16½¢.

Week ended May 19. Except for last Monday, when prices opened low and

recovered on active trading amounting to 13,690 long tons, business on the Exchange was much quieter. Nominal gains of about a dozen points were made on the news of the legislation planned by the Dutch East Indies to control native output and another rumor of a revision of the quota system since the 10% cut in August and the gradual increase to December were too small. No change could be hoped for

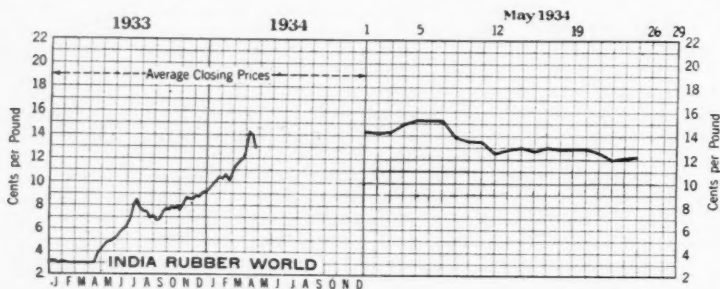
(Continued on page 65)

New York Quotations

New York outside market rubber quotations in cents per pound

	May 25, 1933	Apr. 25, 1934	May 25, 1934
Plantations			
Rubber latex...gal. 42	60	60	
Sheet			
Ribbed, smoked, spot 5½/5½	12½	12	12½
July-Sept. 5½/5½	12½	12½	12½
Oct.-Dec. 5½	13½	12½	12½
Jan.-Mar. 5½	..	12½	12½
Crepe			
No. 1 thin latex, spot 5½	14½/14½	14	14½
July-Sept. 5½/6	14½/15	14½	14½
Oct.-Dec. 6	15½/15½	14½	14½
Jan.-Mar. 6½	14½	15½	15½
No. 3 Amber, spot 4½/4½	10½/10½	10	10½
No. 1 Brown 3½/4	10½/10½	9½	10½
Brown, rolled 3½	7½/8	8½	8½
Paras			
Upriver fine 7½	10½	11½	
Upriver fine 10½	*13½	*13½	
Upriver coarse 7	8	8	
Upriver coarse 7	*10½	*10½	
Islands fine 7½	10	10½	
Islands fine 10½	*13½	*13½	
Acre, Bolivian fine. 8½	10½	11½	
Acre, Bolivian fine. 10½	*13½	*14	
Beni, Bolivian 8½	10½	11½	
Madeira fine 7½	10½	11½	
Caucho			
Upper ball 7	8		
Upper ball *10½	*10½	*10½	
Lower ball 6	7½		
Pontianak			
Bandjermasin 5½	6	7	
Pressed block 8½	11	12	
Sarawak 5½	6	7	
Manicobas			
Manicoba, 30% guar. †3½	†6½	†6	
Mangabiera, thin sheet	..	..
Guayule			
Duro, washed and dried	12	12	
Ampar 13	13		
Africans			
Rio Nufiez 10	10		
Black Kassai 9½	9½		
Prime Niger flake. 16½	16		
Gutta Percha			
Gutta Siak 8½	10½	10	
Gutta Soh 12	15	14½	
Red Macassar 1.50	1.35	1.45	
Balata			
Block, Ciudad Bolivar 25	38	50	
Manaos block 25	38	50	
Surinam sheets .. 32	43	52	
Amber 35	47	55	

*Washed and dried crepe. Shipments from Brazil. †Nominal.



New York Outside Market—Spot Closing Prices Ribbed Smoked Sheets

New York Outside Market—Spot Closing Rubber Prices—Cents per Pound

	April, 1934										May, 1934									
	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12
No. 1 Ribbed Smoked Sheet	12½	12½	12½	12½	12½	12½	12½	13½	14½	14½	14½	15	15½	15½	15½	13½	13½	13½	12½	12½
No. 2 Ribbed Smoked Sheet	12½	12½	12½	12½	12½	12½	12½	13½	14	13½	13½	14½	14½	14½	14½	13½	13½	13½	12½	12½
No. 3 Ribbed Smoked Sheet	12	12	11½	12½	12½	12½	12½	13½	13½	13½	13½	14½	14½	14½	14½	13½	13½	13½	12½	12½
No. 4 Ribbed Smoked Sheet	11½	11½	11½	11½	12	11½	12½	13½	13½	13½	13½	14½	14½	14½	14½	13	12½	12½	11½	11½
No. 1 Thin Latex Crepe	14½	14½	14½	14½	15	14½	15½	16½	16½	16½	16½	17½	17½	17½	17½	15½	15½	15½	14½	14½
No. 1 Thick Latex Crepe	14½	14½	14½	14½	14½	14½	15½	16	15½	15½	16½	16½	16½	16½	16½	15½	15½	15½	14½	14½
No. 1 Brown Crepe	10½	10½	10½	10½	10½	10½	11½	12½	12½	12½	12½	12½	12½	13	13	11½	11½	11½	10½	10½
No. 2 Brown Crepe	10½	10½	10½	10½	10½	10½	11½	12½	12	12	12½	12½	12½	12½	12½	11½	11½	11½	10½	10½
No. 2 Amber	10½	10½	10½	10½	10½	10½	11½	12½	12½	12½	12½	12½	12½	13	13	11½	11½	11½	10½	10½
No. 3 Amber	10½	10½	10½	10½	10½	10½	11½	12½	12	12	12½	12½	12½	12½	12½	11½	11½	11½	10½	10½
No. 4 Amber	9½	9½	9½	9½	9½	10	10½	11½	11½	11½	11½	12½	12½	12½	12½	11	10½	10½	9½	9½
Roller Brown	8	8½	7½	8	8½	8½	9	9½	9½	9½	9½	10½	10½	10½	10½	9½	9½	9½	8½	8½

in this year's figures at the present rate, but whether revision will actually be made remains to be seen. The April consumption figures were disappointing because a small decline was shown, whereas tire factories usually increase production this time of year.

July closed at 13.00¢ against 12.90; September 13.25 against 13.18; October 13.36 against 13.27; December 13.57 against 13.44; January 13.65 against 13.53; and March 13.91 against 13.70.

The R.M.A. reported April consumption by United States manufacturers as 44,947 tons, against 47,097 (revised) for March and 25,928 (revised) for April, 1933.

Imports jumped 2.4% above March and 134.7% above April, 1933, to reach 45,662 long tons. At the end of the month domestic stocks were 351,981 long tons, compared with 353,242 the month before, and a drop of 7.9% from a year ago. Crude rubber afloat was 56,251 long tons, against 54,722 on March 31 and 30,745 on April 30, 1933. Malayan stocks in the hands of dealers were 52,201 tons on April 30; stocks awaiting shipment, 11,180 tons, to increase by 4,157 the combined figures as compared with the month before. It is this condition which is holding back the market, and from which no relief can be expected until the end of the year under the present restriction quotas.

In the Outside Market business was
(Continued on page 72)

United States Latex Imports

Year	Pounds	Value
1931	10,414,712	\$884,355
1932	11,388,156	601,999
1933	24,829,861	1,833,671
1934		
Jan.	2,521,961	\$239,054
Feb.	1,983,210	193,732
Mar.	2,539,425	257,545

Data from United States Department of Commerce, Washington, D. C.

World Rubber Absorption—Net Imports

	Long Tons—1934		
	Jan.	Feb.	Mar.
CONSUMPTION			
United States ...	39,504	41,065	48,684
United Kingdom ...	5,688	8,586	12,191
NET IMPORTS			
Australia	566	950	671
Austria	304	...	...
Belgium	2,173	1,538	965
Canada	1,721	1,854	3,411
Czechoslovakia ..	1,355	516	...
Denmark	114	108	112
Finland	221	24	92
France	6,843	7,373	7,871
Germany	6,057	5,490	6,453
Italy	2,517	2,388	...
Japan	5,628	4,570	...
Netherlands	381	287	284
Norway	136	75	106
Russia	3,438	...	...
Spain	484	656	...
Sweden	714	257	526
Switzerland	156	59	156
Others	*1,450	*1,450	*1,450
Totals	79,450	...	...
Minus U. S. (Cons.)	39,504	41,065	48,684
Total Foreign	39,946	...	...

*Estimate to complete table.
Compiled by Leather-Rubber-Shoe Division,
Department of Commerce, Washington, D. C.

British Malaya

An official cable from Singapore to the Malayan Information Agency, Malaya House, 57 Charing Cross, London, S.W.1, England, gives the following figures for April, 1934:

Rubber Exports: Ocean shipments from Singapore, Penang, Malacca, and Port Swettenham

To	April, 1934	
	Sheet and Crepe Rubber Tons	Latex, Concentrated Latex, Revertex, and Other Forms of Latex Tons
United Kingdom	7,855	194
United States	33,592	601
Continent of Europe ..	8,863	287
British possessions	553	27
Japan	4,405	38
Other countries	333	..
Totals	55,601	1,147

Rubber Imports: Actual, by Land and Sea

From	April, 1934	
	Dry Rubber Tons	Wet Rubber Tons
Sumatra	1,151	12,981
Dutch Borneo	1,228	8,014
Java and other Dutch islands ..	454	155
Sarawak	1,434	13
British Borneo	436	51
Burma	387	30
Siam	678	633
French Indo-China	126	76
Other countries	102	14
Totals	5,996	21,967

Tire Production Statistics

	Pneumatic Casings—All Types		
	In-ventory	Production	Total Shipments
1932	6,115,487	32,067,732	32,200,820
1933	7,110,456	36,243,384	35,274,970
1934			
Jan.	9,393,857	3,803,939	3,125,726
Feb.	10,403,282	4,205,039	3,186,363
Solid and Cushion Tires			
1932	23,830	97,089	108,581
1933 .....	...	130,987	126,990
1934			
Jan.	29,971	13,792	13,946
Feb. ....	...	12,440	12,797
Inner Tubes—All Types			
1932	5,399,551	29,513,246	30,328,536
1933	6,251,941	34,044,689	33,112,472
1934			
Jan.	8,150,708	3,444,574	3,102,931
Feb.	8,892,154	3,956,082	3,223,591

	Cotton and Rubber Consumption Casings, Tubes, Solid and Cushion Tires		Consumption of Motor Gasoline (100%) Gallons
	Cotton Fabric Pounds	Crude Rubber Pounds	
1932 ...	128,981,222	416,577,533	15,703,800,000
1933 ...	148,989,293	512,489,423	15,880,746,000
1934			
Jan. ..	16,437,210	59,957,163	1,239,798,000
Feb. ..	18,720,923	63,400,171	1,047,816,000

Rubber Manufacturers Association, Inc., figures representing approximately 97% of the industry for 1934 and 80% for previous years, with the exception of gasoline consumption.

U. S. Crude and Waste Rubber Imports for 1934

	Plantations		Paras		Afri-Canals		Guay-Matto		Totals		Ba-lanceous		Miscellaneous		Waste	
	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933	1934	1933
Jan.	44,988	973	182	61	...	...	...	...	46,204	31,110	73	693	32	...	...	...
Feb.	30,164	750	118	...	...	...	...	...	31,032	18,875	70	607	...	...	...	...
Mar.	43,204	901	450	...	...	...	...	...	44,605	27,879	169	415	157	...	...	...
Apr.	44,394	827	324	...	...	...	...	...	45,662	19,459	165	633	99	...	...	...
Total, 4 mos., 1934	162,750	3,451	1,074	61	17	150	...	...	167,503	...	477	2,348	288	...	...	...
Total, 4 mos., 1933	94,040	2,108	1,152	23	...	...	...	...	97,323	...	87	2,298	11	...	...	...

Compiled from the Rubber Manufacturers Association, Inc., statistics.

RUBBER SCRAP

THE April demand for rubber scrap was exceptionally good owing to the stimulating effect on the crude rubber market of the announcement of agreement on restriction. Export trade on inner tubes and solid tires is very good and steady.

BOOTS AND SHOES. The trade is fairly active, and prices steady.

INNER TUBES. All grades are active. Prices are firm and slightly advanced over quotations of a month ago.

TIRES. The market is fairly active, and consumption is increasing. Prices are firm and unchanged.

SOLID TIRES. Solids continue scarce. The price of clean mixed grade rose \$1 to \$2 a ton.

MECHANICALS. All grades have advanced except mixed black and white mechanicals, which remain unchanged.

CONSUMERS' BUYING PRICES

(Carload Lots Delivered Eastern Mills)

May 26, 1934

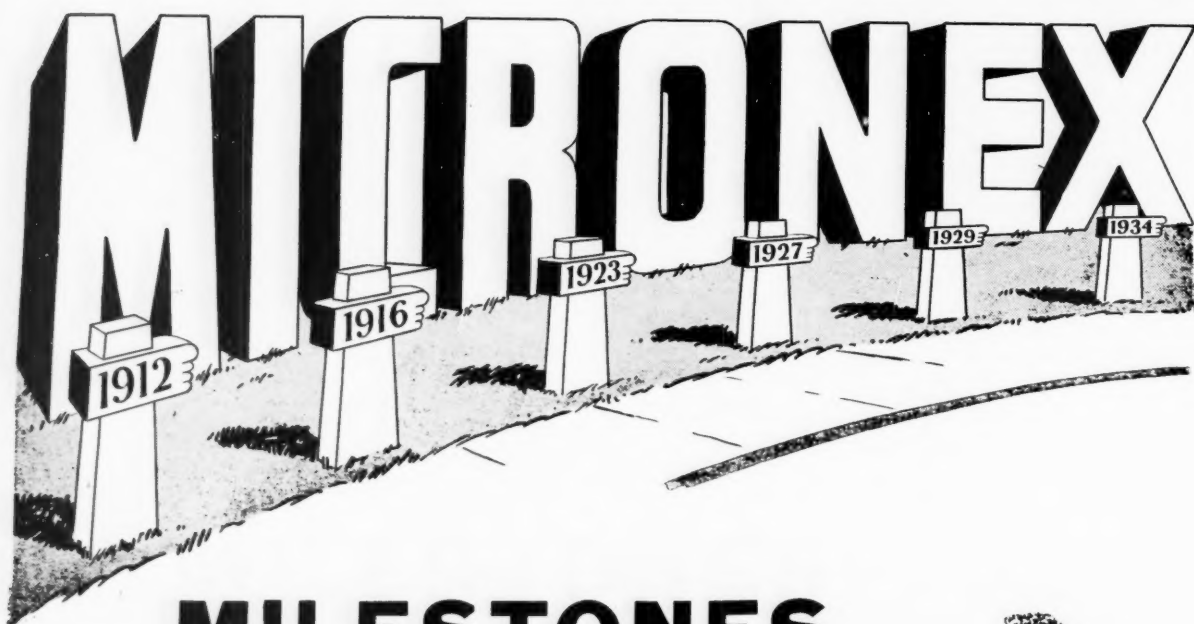
Boots and Shoes	Prices
Boots and shoes, black	\$0.01 1/4 / \$0.01 1/2
Colored .....	.01 1/4 / .01 1/2
Untrimmed arctics .....	.01 1/4 / .01 1/2
Inner Tubes	
No. 1, floating .....	.06 3/4 / .07
No. 2, compound .....	.03 3/4 / .04
Red .....	.02 3/4 / .02 7/8
Mixed tubes .....	.03 1/4 / .03 3/4
Tires (Akron District)	
Pneumatic Standard	
Mixed auto tires with	
beads	11.50 / 11.75
Beadless	16.50 / 17.00
Auto tire carcasses	11.00 / 12.00
Black auto peelings	21.50 / 22.50
Solid	
Clean mixed truck	39.00 / 42.00
Light gravity	40.00 / 42.00
Mechanicals	
Mixed black scrap .....	.01 / .01 1/4
Hose, air brake	15.00 / 16.00
Garden, rubber covered	13.00 / 13.50
Steam and water, soft	13.00 / 13.50
No. 1 red .....	.01 1/4 / .02
No. 2 red .....	.01 1/4 / .01 1/2
White druggists' sundries .....	.02 / .02 1/4
Mechanical .....	.01 1/4 / .01 1/2
Hard Rubber	
No. 1 hard rubber .....	.10 1/4 / .10 1/2

Low and High New York Spot Prices

All Prices in Cents per Pound

	1934*	1933	1932
PLANTATIONS			
Thin latex crepe. 14	17 1/2	5 1/2 / 6 1/2	3 1/2 / 5
Smoked sheet.			
No. 1 ribbed ... 12	15 1/4	4 1/2 / 6 1/2	2 1/4 / 4 1/4
PARAS			
Upriver fine ... 11	13 1/4	6 1/4 / 8 1/4	3 1/2 / 5 1/4

*Figured to May 26, 1934.



MILESTONES

- 1912** The First Black for Rubber.
- 1916** Introduced Compressed Black.
- 1923** Pioneered Systematic Research on Carbon Black.
- 1927** Originated Dustless Black in Pellet Form (Protected by Basic Patents)
- 1929** Instituted First Control by Rubber Testing at Point of Manufacture.
- 1934** As Always, More Tires Continue to be Made with Micronex Than with Any Other Black.



BINNEY & SMITH CO.

Specialists in Carbon Blacks, Stearic Acid, Iron Oxides,
Mineral Rubber and Other Products for the Rubber Industry

41 EAST 42nd STREET

NEW YORK, N. Y.

COMPOUNDING INGREDIENTS

MANUFACTURING in the rubber industry is progressing at the same rate or better than one month ago. Tire and tube production is considered fair at somewhat more than half capacity. Makers of insulated wire and cables are operating on restricted schedules, awaiting revival in building construction for return to capacity output. Mechanicals, proofing, topping, footwear, heels, and sundries are moderately active.

ACCELERATORS, ETC. Rubber chemicals were in very active demand during the first quarter in close agreement with the increased consumption of crude and reclaimed rubber. At present the demand for rubber chemicals has decreased somewhat. Accelerators are quoted at firm prices until the close of the second quarter when some small

adjustments will be necessary on certain products.

CARBON BLACK. Demand for blacks is proceeding on normal schedules from rubber manufacturers. The basis of deliveries is just about in balance with production.

FACTICE. The excise tax by the government on imported oils has not affected the manufacture of factice up to the present, and business continues to be normal.

LITHARGE. Demand is fairly active. Reduction in the price of pig metal caused a reduction about the middle of May in the price of the commercial grade. In the East the new price is 5½¢ and on the Pacific Coast 5¼¢.

LITHOPONE. Rubber trade demand has been only fairly active the past month.

RUBBER SOLVENTS. Akron and other

tire manufacturing sections provided a very active consuming demand. Prices rose sharply on both heavy and light grades.

STEARIC ACID. The federal tax covering coconut oil will have some effect on the market for tallows, greases, stearic acid, and other softeners.

TITANIUM PIGMENTS. These products are moving actively into rubber consuming channels at firm prices in accordance with published schedules. The rubber trade's demand is so great that producers have difficulty in keeping up to their orders. The indications for a continuance of this activity are favorable for at least another month.

ZINC OXIDE. A gradual increase of consuming demand featured business for the month, with prices firm at the April 1 advance of \$15 per ton.

New York Quotations

May 26, 1934

Prices Not Reported Will Be Supplied on Application

Abrasives		
Pumicestone, Ital. Amer. ground	lb. \$0.03	/\$0.03½
Rottenstone, domestic	ton	23.50
Accelerators, Inorganic		
Lead, white, dry (bbils.)	lb.	.06½
Lime, hydrated	ton	20.00
Litharge (commercial)	lb.	.06½
Magnesia, calcined, heavy	lb.	.04
carbonate	lb.	.06 / .06½
Accelerators, Organic		
A-1 (Thiocarbamid)	lb.	.21 / .25
A-5-10	lb.	.33 / .36
A-7	lb.	.53 / .65
A-11	lb.	.60 / .75
A-16	lb.	.55 / .65
A-19	lb.	.56 / .75
A-32	lb.	.70 / .80
Accelerator 49	lb.	.40 / .50
Acrin	lb.	
Aldehyde ammonia	lb.	.65 / .70
Altax	lb.	
Anhydroformaldehyde-para-	lb.	
toluidine	lb.	
Barak	lb.	
Butene	lb.	
Captax	lb.	
Crylene	lb.	
paste	lb.	
DBA	lb.	
Di-esterex N.	lb.	.46 / .56
DOTG	lb.	.36 / .46
du Pont 808	lb.	
833	lb.	
Ethylidine aniline	lb.	
Formaldehyde aniline	lb.	
Guantal	lb.	.42 / .51
Heptene	lb.	
base	lb.	
Hexamethylenetetramine	lb.	.37
Lead oleate, No. 999	lb.	.10
Witco	lb.	.10
Lithex	lb.	
Monex	lb.	
Novex	lb.	
Pipsol X	lb.	3.55 / 4.00
Plastone	lb.	
R-2	lb.	1.55 / 1.90
base	lb.	4.55 / 5.00
R & H 40	lb.	
50-D	lb.	
Safex	lb.	
Super-sulphur No. 1	lb.	
No. 2	lb.	
Tetrone A	lb.	
Thio	lb.	
Thiocarbamid	lb.	.20
Thionex	lb.	
Trimene	lb.	
base	lb.	
Triphenyl guanidine	lb.	.58 / .60
Tuads	lb.	
Ureka	lb.	.62 / 1.00
Blend B	lb.	

C		
Vulcanex	lb.	\$0.58 / \$0.69
Vulcanol	lb.	
Vulcone	lb.	
ZBX	lb.	
Z-88-P	lb.	\$0.48 / \$0.60
Zimate	lb.	
Acids		
Acetic 28% (bbils.)	100 lbs.	2.91 / 3.16
glacial (carboys)	100 lbs.	14.00
Sulphuric, 66%	ton	15.50
Age Resisters		
Age-Rite Gel	lb.	
powder	lb.	
resin	lb.	
white	lb.	
Albasan	lb.	
Antox	lb.	
BLE	lb.	
Flectol A	lb.	.54 / .60
B	lb.	.54 / .60
H	lb.	
Hillex B	lb.	
Neozone	lb.	
Oxynone	lb.	.66 / .90
Parazone	lb.	
Permalux	lb.	
Resistox	lb.	.52 / .65
Solux	lb.	
VGB	lb.	
Zalba	lb.	
Alkalies		
Caustic soda, liquid, Colum-	100 lbs.	2.25
bia	100 lbs.	2.60
solid	100 lbs.	
Antiscorch Materials		
Retarder-W	lb.	
R. H. Cumar	lb.	.075 / .085
UTB	lb.	
Antisun Materials		
Heliozone	lb.	
Sunproof	lb.	
Binders, Fibrous		
Cotton flock, dark	lb.	.10½ / .13
died	lb.	.50 / .85
white	lb.	.14 / .20
Rayon flock, colored	lb.	1.60 / 1.75
white	lb.	1.40
Brake Lining Saturants		
B. R. C. No. 553	lb.	.015 / .017
B. R. T. No. 3	lb.	.015 / .017
Colors		
BLACK		
Bone	lb.	.05½ / .15
Lampblack (commercial)	lb.	.08 / .12
BLUE		
Brilliant	lb.	
Prussian	lb.	.35½
Toners	lb.	.80 / 3.50
Ultramarine, dry	lb.	.10
BROWN		
Mapico	lb.	.13

Sienna, Italian, raw		
lb.		\$0.12½
GREEN		
Brilliant	lb.	
Chrome, light	lb.	.20
medium	lb.	.20
oxide	lb.	.21½
Dark	lb.	
Guignet's	lb.	.70
Light	lb.	
Toners	lb.	.85 / \$3.50
ORANGE		
Lake	lb.	
Toners	lb.	.40 / 1.60
ORCHID		
Toners	lb.	1.50 / 2.00
PINK		
Toners	lb.	1.50 / 4.00
PURPLE		
Permanent	lb.	
Toners	lb.	.60 / 2.00
RED		
Antimony	lb.	
Crimson, R. M. P. No. 3	lb.	.46
Sulphur free	lb.	.48
7-A	lb.	.33
Z-2	lb.	.20
Chinese	lb.	
Crimson	lb.	
Iron Oxides		
Rub-Er-Red	lb.	.09½
Mapico	lb.	.09½
Medium	lb.	
Scarlet	lb.	
Toners	lb.	.80 / 2.00
WHITE		
Lithopone (bags)	lb.	.04½ / .04¾
Albalith	lb.	.04½ / .04¾
Azolith	lb.	.04½ / .04¾
Cryptone No. 19	lb.	.06 / .06½
CB No. 21	lb.	.06 / .06½
Rayox	lb.	
Titanox-A	lb.	.17 / .18½
B	lb.	.06 / .06½
C	lb.	.06 / .06½
Zinc Oxide		
Azo 35 (35% leaded)	lb.	.05¾ / .06
Z (10% leaded)	lb.	.06¾ / .06¾
ZZ (3-5% leaded)	lb.	.06¾ / .06¾
ZZZ (lead free)	lb.	.06¾ / .06¾
Black label (lead free)	lb.	.06¾
Ceramotone	lb.	.06¾ / .06¾
F. P. Florence, green	lb.	
seal	lb.	.09¾ / .09¾
red seal	lb.	.08¾ / .08¾
white seal (bbils.)	lb.	.10¾
Green label (lead free)	lb.	.06¾
seal, Anaconda	lb.	.09¾ / .09¾
Horsehead (lead free) brand		
Selected	lb.	.06¾ / .06¾
Special	lb.	.06¾ / .06¾
XX	lb.	.06¾ / .06¾
red	lb.	.06¾ / .06¾

Kadox, black label.....lb.	\$0.09 1/2 / \$0.09 3/4
blue label.....lb.	.08 1/2 / .08 3/4
red label.....lb.	.07 / .07 1/4
Lead free (all grades).....lb.	
Anaconda.....lb.	.06 1/2 / .06 3/4
Leaded, 5%, Anaconda.....lb.	.06 1/2 / .06 3/4
35%, Anaconda.....lb.	.05 1/2 / .06
Lehigh (leaded).....lb.	.05 1/2 / .06
Red label (lead free).....lb.	.06 1/2 / .06 3/4
seal, Anaconda.....lb.	.08 1/2 / .08 3/4
Standard (leaded).....lb.	.06 1/2 / .06 3/4
U. S. P. (bbis.).....lb.	.12 1/2 / .12 3/4
White seal, Anaconda.....lb.	.10 1/2 / .10 3/4
XX zinc sulphide.....lb.	.11 / .11 1/4

YELLOW

Chrome.....lb.	.15
Lemon.....lb.	
Mapico.....lb.	.09 1/2
Ocher, domestic.....lb.	.01 1/2 / .01 3/4
Toners.....lb.	2.50

Dispersing Agents

Bardex.....lb.	.023 / .025
Bardol.....lb.	.021 / .023
Darvan.....lb.	

Factice—See Rubber Substitutes

Fillers, Inert

Asbestos.....ton	15.00
Barytes (f.o.b. St. Louis).....ton	23.00
off color.....ton	
white.....ton	
Blanc fixe, dry precip.....ton	70.00 / 75.00
pulp, 66 2/3%.....ton	42.50
Calcene.....100 lbs.	1.75
Infusorial earth.....lb.	.03
Kalite No. 1.....ton	
No. 3.....ton	
Suprex, white, extra light.....ton	60.00 / 75.00
heavy.....ton	45.00 / 60.00
Whiting.....ton	
Chalk, precipitated.....lb.	
Columbia brand.....ton	8.00
Domestic.....ton	
Hakuenka.....ton	
Paris white, English cliff.....ton	
stone.....100 lbs.	
Sussex.....ton	
Witco.....ton	15.00
Wood flour (f.o.b. New Hampshire).....ton	21.00 / 55.00

Fillers for Pliability

Flex.....lb.	
Fumonex.....lb.	.03 / .05 1/2
P-33.....lb.	
Thermax.....lb.	
Velvetex.....lb.	.02 / .05

Finishes

IVCO lacquer, clear.....gal.	2.60 / 2.90
colors.....gal.	2.70 / 3.35
Mica, amber.....lb.	.03 1/2 / .05
Rubber lacquer.....gal.	
No. 106.....gal.	3.00
Starch, corn, p.wd.....100 lbs.	2.81 / 3.01
potato.....lb.	.05 1/2 / .06
Talc, dusting.....ton	15.00 / 25.00
Pyrex.....ton	

Latex Compounding Ingredients

Accelerator 552.....lb.	
Aquarex.....lb.	
Arasco.....lb.	.28 / .40
Catalpo.....ton	

Colloidal color pastes.....lb.	
sulphur.....lb.	
zinc oxide.....lb.	
Disinfectants.....lb.	
Dispersaid.....lb.	\$1.50
Dispersed Antox.....lb.	
factice compound.....lb.	.26
Emo, brown.....lb.	.12
white.....lb.	.12
Emulsified Heliozone.....lb.	
Igepon A.....lb.	
Nekal BX (dry).....lb.	
Neozone L.....lb.	
Palmol.....lb.	.085
Tepidone.....lb.	
Vulcan colors.....lb.	

Mineral Rubber

B. R. C. No. 20.....lb.	.014 / \$0.016
Black Diamond.....ton	25.00 / 27.00
Genasco (fact'y).....ton	
Gilsonite (fact'y).....ton	
Hydrocarbon, granulated.....ton	35.00 / 37.00
hard.....ton	
soft.....ton	
Parmr Grade 1.....ton	21.00 / 26.00
Grade 2.....ton	21.00 / 26.00

Mold Lubricants

Rusco mold paste.....lb.	.12 / .30
Sericite.....ton	
Soapbark (cut).....lb.	.07 1/2 / .08
Soapstone.....ton	15.00 / 25.00

Oils

Castor, blown.....lb.	.11 1/2 / .12 1/4
Poppyseed.....gal.	1.50 / 1.60
Red, distilled (bbis.).....lb.	.06 1/2 / .07 1/4

Protective Colloid

Casein, domestic.....lb.	.12 1/2 / .13
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Reclaiming Oils

B. R. V.....lb.	.039 / .041
S. R. O.....lb.	.012 / .014

Reinforcers

Carbon Black	
Aerfloted arrow specifica- tion black.....lb.	.0535 / .0825
Arrow Compact.....lb.	
Century (delivered).....lb.	.0445 / .0535
"Certified" Cabot.....lb.	
Spheron.....lb.	
Disperso (delivered).....lb.	.0445 / .0535
Dixie, c.l., f.o.b. Galveston or Houston, Tex.....lb.	.0445
local stock, delivered.....lb.	.07 / .08 1/4
Gastex.....lb.	.03 / .07
Kosmos, c.l., f.o.b. New Orleans, La.; Galves- ton or Houston, Tex.....lb.	.0445
local stock, delivered.....lb.	.07 / .08 1/4
Micronex.....lb.	.0535 / .0825
Ordinary (compressed or uncompressed).....lb.	.0535 / .0825
Carbonex.....lb.	.030 / .0375
S.....lb.	.0315 / .040
Clays	
Blue Ridge, dark.....ton	
China.....ton	
Dixie.....ton	
McNamee.....ton	
Par.....ton	
Perfection.....ton	7.50 / 9.00

Standard.....ton	
Suprex No. 1, selected.....ton	\$10.00 / \$24.00
No. 2, standard.....ton	8.00
Cumar EX.....lb.	.0275 / .0375
Glue, high grade.....lb.	.23 / .28

Reodorants

Amora A.....lb.	
B.....lb.	
C.....lb.	
D.....lb.	
Para-Dors.....lb.	
Rodo No. 0.....lb.	
No. 10.....lb.	

Rubber Substitutes or Factice

Amberex.....lb.	.13 1/4
Black.....lb.	.06 / .08
Brown.....lb.	.07 / .11
White.....lb.	.07 1/2 / .12

Softeners

B. R. C. No. 555.....lb.	.012 / .014
B. R. T. No. 7.....lb.	.015 / .017
Burgundy pitch.....lb.	.05 / .06
(net weight).....lb.	.06 1/2 / .08 1/2
Cycline oil.....gal.	.15 / .28
Fluxol.....ton	
Hardwood pitch, c.l.....ton	23.50 / 25.00
Palm oil (Witco).....lb.	.05
Petrolatum, light amber.....lb.	.02 1/2 / .03 1/2
Pigmentar (drums).....gal.	.24 / .26
Pigmentar oil (drums).....gal.	.24 / .26
Pine oil, dest. distilled (drums).....gal.	.50 / .52
Pine tar.....gal.	.23 / .30
specific retort, l.c.l. gal.	.28 / .33
Plastogen.....lb.	
Rosin oil, compounded.....gal.	.34 / .40
Rubtack.....lb.	.10
Sperso.....lb.	
Tackol.....lb.	.085 / .18
Tonox.....lb.	
Witco, No. 20.....gal.	.15

Softeners for Hard Rubber Compounding

Resin C-55.....lb.	.0125 / .0145
70°.....lb.	.0125 / .0145
85°.....lb.	.0125 / .0145

Solvents

Benzol 90% (drums).....gal.	.24
Bondogen.....gal.	
Carbon bisulphide (drums).....lb.	.05 1/2 / .12
tetrachloride.....lb.	.05 1/2
Dipentene, commercial.....gal.	.34 / .44
Rubber (f.o.b. Group 3 refineries).....gal.	.06 1/2
Turpentine, wood, dest. distilled (drums).....gal.	.45 / .47

Stabilizers for Cure

Laurex, ton lots.....lb.	
Stearax B.....lb.	.08 / .10 1/2
flake.....lb.	.07 1/2 / .10
Stearic acid, dbl. pres'd.....lb.	.10 / .15
Zinc stearate.....lb.	

Synthetic Rubber

DuPrene.....lb.	1.00
-----------------	------

Vulcanizing Ingredients

Sulphur	
Chloride, drums.....lb.	.03 1/2 / .04
Flowers, extrafine refined, U.S.P. ....100 lbs.	
Rubber.....100 lbs.	1.95 / 2.70
Telloy.....lb.	
Vandex.....lb.	

(See also Colors—Antimony)

Plantation Rubber Crop Returns by Months

	Borneo (26 Companies)		Ceylon (102 Companies)		India and Burma (21 Companies)		Malaya (338 Companies)		Netherlands East Indies (60 Companies)		Miscellaneous (8 Companies)		Total (615 Companies)	
	Long Tons	Index	Long Tons	Index	Long Tons	Index	Long Tons	Index	Long Tons	Index	Long Tons	Index	Long Tons	Index
1933														
January.....	360	73.6	1,126	55.2	120	21.4	12,467	100.3	2,561	97.5	3,854	95.6	124	68.5
February.....	323	66.1	907	44.4	46	8.2	11,635	93.6	2,703	102.9	4,225	104.8	54	29.8
March.....	319	65.2	994	48.7	126	22.4	10,512	84.5	2,756	105.0	4,177	103.6	93	51.4
April.....	304	62.2	1,244	61.0	139	24.7	10,529	84.7	2,845	108.3	3,844	95.3	121	66.9
May.....	333	68.1	881	43.2	117	20.8	11,879	95.5	2,995	114.1	4,160	103.2	134	74.0
June.....	334	68.3	996	48.8	31	5.5	12,411	99.8	2,965	112.9	4,235	105.0	140	77.3
July.....	354	72.4	1,260	61.7	29	5.2	12,527	100.7	2,919	111.2	4,557	113.0	133	73.5
August.....	369	75.5	1,399	68.5	40	7.1	12,849	103.3	2,449	93.3	4,435	110.0	127	70.2
September.....	373	76.3	1,488	72.9	197	35.1	12,255	98.6	2,443	93.0	4,643	115.2	110	60.8
October.....	388	79.3	1,216	59.6	394	70.1	12,829	103.2	2,824	107.5	4,783	118.6	112	61.9
November.....	412	84.3	1,846	90.4	495	88.1	12,922	103.9	3,033	115.5	4,768	118.3	113	62.4
December.....	388	79.3	1,902	93.2	519	92.3	13,977	112.4	3,096	117.9	4,929	122.2	118	65.2
TOTALS.....	4,257	...	15,259	...	2,253	...	146,792	...	33,589	...	52,610	...	1,379	...
MONTHLY AVERAGE.....	355	72.6	1,272	62.3	188	33.5	12,233	98.4	2,799	106.6	4,384	108.7	115	63.5
1934														
January.....	368	75.2	1,402	68.7	403	71.7	12,981	104.4	2,821	107.4	4,411	109.4	130	71.8
February.....	356	72.8	1,111	54.4	123	21.9	12,109	97.4	3,041	115.8	4,738	117.5	70	38.7
March.....	385	78.7	1,197	58.6	355	63.2	11,767	94.6	3,397	129.4	4,776	118.5	112	61.9
3 months ending March, 1934.....	1,109	...	3,710	...	881	...	36,857	...	9,259	...	13,925	...	312	...
1933.....	1,002	...	3,027	...	292	...	34,614	...	8,020	...	12,256	...	271	...

NOTE: Index figures throughout are based on the monthly average for 1929=100. Issued April 25, 1934, by the Commercial Research Department, The Rubber Growers' Association, Inc., London, England.

COTTON AND FABRICS

SILVER legislation, action on the securities bill, the drought in wheat, and curtailment of mill output were the principal influences affecting the cotton market since a month ago.

Early in May it looked as if the President could suppress the effort to remonetize silver, but the movement took on strength, and sentiment was reversed. The 40 points lost the first half were regained the second half of the month.

The most important result of our reduction program, however, has been to increase foreign growths. The Exchange Service puts world production outside the United States at 12,103,000 bales, the largest on record. Every country but one has increased output.

In the cotton goods market sales have been slow although the rate of activity in mills continued high. The drop in goods sales, coupled with a decline in exports to 200,000 bales behind last year, did not help prices.

General Johnson announced on May 22 that the Code Authority for the Textile Industry had decided to curtail output by 25% beginning June 4 for a 2- or 3-month period, by reducing working hours from 80 to 60, or 30-hour instead of 40-hour shifts.

George F. Sloan revealed that unsold stocks increased 332,362,000 yards on April 28, from 250,330,000 on February 24. Unfilled orders in the same period dropped from 1,138,384,000 yards to 756,037,000 yards.

Week ended April 28. Heavy liquidation sent cotton prices down 43 to 47 points. The May position was \$9 a bale below its high mark. Sales came from all sources. Speculators let go their holdings when it was apparent that little hope could be held for silver legislation at this session of Congress; commission houses sold lines carried since the uptrend started in April, 1933; and even new crop deliveries were affected. Wholesale dry goods quarters, reporting lower prices, said unless new business developed much faster than expected curtailment of output would be necessary. Government loans to growers, with a month's carrying charge, amount to about 10½¢, the price reached at several interior points. From 1,000,000 to 2,000,000 bales are thus held, with another 2,000,000 bales represented by option cotton.

May closed at 11.01¢, compared with 11.59¢ last Saturday; July 11.11 against 11.69; October 11.25 against 11.83; December 11.37 against 11.95; January 11.46 against 11.99; and March 11.53 against 12.07.

World consumption of American cotton was 1,177,000 bales during March or 24,000 bales less than in 1933, according to the Cotton Exchange Service, but for the first 8 months consumption was 9,354,000 bales, or 66,000 ahead of last season.

Forwardings to domestic mills reached a new high last week: 138,000 bales, against 115,000 in the preceding week, and 104,000 in 1933. Active trading manifested itself in the textile markets, but prices were shaded again.

Commenting on crop control, A. H. Garside, economist of the New York Cotton Exchange, said: "While the production control may be successful to a degree for a few years since foreign countries cannot quickly expand their production as much as America is reducing her output, ultimately the rest of the world will supply that amount of cotton which we decline to produce, and when this occurs the price level will still be the same as it would have been if we were still dominating the world production. The only hope of making production control maintain a profitable price for the Southern farmer would be in carrying the restriction to the point of growing cotton only for consumption and creating a tariff wall to shut out foreign cotton."

Week ended May 5. Cotton lost heavily the first 2 days of the week, gained on Wednesday, lost again, gained, and then ended with a soft tone. Speculators and foreign traders withdrew from the market largely, with Japan the only large buyer. Silver legislation pending in Congress caused part of the decline, and the uncertainty over what might be done with the proposed securities act added to it.

After the week of backing and filling, however, prices were unchanged to 8 points lower. May was 10.93¢ against 11.01¢; July 11.08 against 11.11; October 11.22 against 11.25; December 11.34 against 11.37; January 11.40 against 11.46; and March 11.53 unchanged.

About 50% of the acreage reserved for planting has been sown, against about 55% at the same time last year. A private report estimated that 29,255,000 acres would be put in cotton, against 40,929,000 last year. April fertilizer sales, according to the Exchange Service, were 573,000 tons, against 856,000 in April, 1933. For the first 5 months it was 2,063,000 tons, against 1,736,000 last year, and 1,390,000, 2 years ago.

Foreign crop reports to the Department of Agriculture show that the Indian output will be 4,159,000 bales this season, 263,000 higher than last year, and 791,000 above that of 1932. It is, however, 400,000 under the 5-year average up to 1931. In Egypt, 1,611,000 bales were ginned this year, 692,000 greater than in 1933, and 4% above the 1929-1930 crop. The domestic crop is put at 11,200,000 bales in this country on April 1.

Forwardings to mills of the world dropped 60,000 bales last week, and so far this season they have been 11,205,000 bales, against 10,621,000 in 1933 and 11,127,000 in 1932. Exports dropped by

about 60,000 bales too and now stand about 100,000 bales behind last year's.

Week ended May 12. The possibility that silver might be remonetized, the drought in wheat, and the shortage of contracts served to lift cotton prices. Prospects of a short wheat crop sent prices soaring in the Pit, with cotton borrowing strength from the rise.

Prices gained from 17 to 24 points for the week. May closed at 11.17¢, compared with 10.93¢; July 11.28 against 11.08; October 11.43 against 11.22; December 11.55 against 11.34; January 11.60 against 11.40; and March 11.70 against 11.53.

Business was quiet all week, in sharp contrast with the same time last year when things were booming. Spot sales were 22,000 bales, against 96,000 last year; domestic mills took 98,000 bales, against 114,000 in the previous week and 130,000 a year ago; exports were 52,000 against 94,000; and sales of dry goods have been slow.

Week ended May 19. Cotton prices showed good gains for the week, with a steady rise interrupted only twice by profit taking. The principal influence was the reported capitulation of the President to the silver interests. Other favorable factors were the rise in grains and stocks.

Prices gained from 21 to 24 points. May closed at 11.41¢ against 11.17; July 11.49 against 11.28; October 11.66 against 11.43; December 11.79 against 11.55; January 11.84 against 11.60; and March 11.93 against 11.70.

Consumption figures were up to expectations. During April the Census Bureau reported consumption at 512,703 bales of lint, compared with 543,690 in March and 470,359 in April, 1933. Cotton on hand the end of the month was 1,584,746 bales in consuming establishments and 7,101,941 in public storage and compresses, against 1,371,218 and 8,151,913 a year ago. It was the largest April consumption since April, 1930. Exports were 386,594 bales, compared with 550,104 in March and 436,450 in April, 1933. Active spindles were 26,450,750, against 26,503,876 in March and 23,421,680 a year ago.

Several mills have curtailed output so far. Sales were fair last week, and forwardings totaled 87,000 bales, compared with 98,000 the previous week and 139,000 in 1933.

Weather reports were good. The crop is well advanced in most sections, with only one or 2 areas which need more sun in Louisiana.

The Egyptian crop is expected to be 20% greater this year than last, which trend is typical of all foreign crops except Peru. Foreign production is put at 12,103,000 bales by the Exchange Service, the largest on record. In 1932 it was 10,544,000 bales, and in 1931, 9,658,000 bales.

Week ended May 26. In a quiet and

dull market, prices dropped from 8 to 11 points on Monday. The weather was excellent over most of the Cotton Belt, and sales of dry goods are spotty, falling below production again. Silver was strong, and the spring wheat crop was said to be considerably damaged. Under these conflicting movements, the cotton market did not know which way to turn.

The Census Bureau report showed that the cotton spinning industry operated at 104.5% capacity in April on a single-shift basis, compared with 102.9% in March and 95.7% in April, 1933.

On Tuesday the market recovered early in the session, but eased off later and continued so for 2 days. The pace was slow, traders being hesitant about purchases until the contents of the President's silver message were revealed, when professional selling took place. The decision of the Code Authority to cut output of mills by 25% also influenced the market.

The Department of Agriculture estimated 1933 production at 13,047,000 bales, compared with a December estimate of 13,177,000 bales and a 1932 crop of 13,002,000 bales.

Cotton futures, after slight losses early Friday, rallied as ring shorts covered short lines, and in some cases took to the constructive side, owing to the increasingly apparent resistance the market seemed to show to declines.

On Saturday unseasonably cool weather over the Cotton Belt and a general absence of selling resulted in a rise in cotton prices. Quotations, compared with last week-end's, follow: July 11.43¢ against 11.49¢; October 11.63 against 11.66; December 11.74 against 11.79; January 11.79 against 11.84; and March 11.92 against 11.93.

Cotton Fabrics

DUCKS, DRILLS, AND OSNABURGS. The market is a little quieter than usual for the season with respect to new contracts. On the other hand deliveries against back orders are being shipped freely. The persistent call for goods in anticipation in many instances seems to indicate small stocks in the hands of those using cotton textiles as raw material in their own plants. In view of the stronger raw cotton position as against that of several weeks ago more active trading is expected shortly.

RAINCOAT FABRICS. As it is still between seasons, the manufacturers are assorting and sampling raincoat fabrics, etc., to determine what patterns to run for the fall trade.

SHEETING. The market is very quiet, with practically no inquiry or business being placed. Press reports on May 23 stated that Hugh S. Johnson, NRA Administrator, had approved a 25% limitation in cotton industry output for from 4 to 12 weeks from June 4. The curtailment will be effected "by reducing hours or days in each week and not by shutdown." The opinion is general that business will be quiet during the summer.

TIRE FABRICS. Tire fabrics were exempt in the curtailment of cotton out-

WEEKLY AVERAGE PRICES OF MIDDLING COTTON

Week Ended	Cents per Pound
Apr. 28.....	11.22
May 5.....	11.03
May 12.....	11.51
May 19.....	11.56
May 26.....	11.51

New York Quotations

May 26, 1934

Drills	Cents
38-inch 2.00-yard.....yd.	\$0.1534
40-inch 3.47-yard.....	.09
50-inch 1.52-yard.....	.2218
52-inch 1.90-yard.....	.1818
52-inch 2.20-yard.....	.1534
52-inch 1.85-yard.....	.18
Ducks	
38-inch 2.00-yard D. F.....yd.	.16
40-inch 1.45-yard S. F.....	.2214
72-inch 1.05-yard D. F.....	.3034
72-inch 16.66-ounce.....	.3414
72-inch 17.21-ounce.....	.35
MECHANICAL	
Hose and belting.....lb.	.3414
TENNIS	
52-inch 1.35-yard.....yd.	.24
*Hollands	
GOLD SEAL	
30-inch No. 72.....yd.	.1914
40-inch No. 72.....	.2114
RED SEAL	
30-inch.....yd.	.17
40-inch.....	.1814
50-inch.....	.2414
Osnaburgs	
40-inch 2.34-yard.....yd.	.1334
40-inch 2.48-yard.....	.1214
40-inch 3.00-yard.....	.1012
40-inch 10-ounce part waste.....	.1514
40-inch 7-ounce part waste.....	.1034
37-inch 2.42-yard.....	.1214
Raincoat Fabrics	
COTTON	
Bombazine 60 x 64.....yd.	.1014
Bombazine 60 x 48.....	.0934
Plaids 60 x 48.....	.1114
Plaids 48 x 48.....	.1114
Surface prints 60 x 64.....	.1234
Surface prints 60 x 48.....	.12
Print cloth, 38½-inch, 60 x 64.....	.0614
Print cloth, 38½-inch, 60 x 48.....	.0514
SHEETINGS, 40-INCH	
48 x 48, 2.50-yard.....yd.	.1014
48 x 48, 2.85-yard.....	.0934
64 x 68, 3.15-yard.....	.1034
56 x 60, 3.60-yard.....	.0834
44 x 48, 3.75-yard.....	.07
44 x 40, 4.25-yard.....	.0634
SHEETINGS, 36-INCH	
48 x 48, 5.00-yard.....yd.	.0614
44 x 40, 6.15-yard.....	.0414
Tire Fabrics	
BUILDER	
17¼ ounce 60" 23/11 ply Karded peeler.....lb.	.4234
17¼ ounce 60" 10/5 ply Karded peeler.....lb.	.3734
CHAFFER	
14 ounce 60" 20/8 ply Karded peeler.....lb.	.4234
12 ounce 60" 10/4 ply Karded peeler.....lb.	.35
9¾ ounce 60" 20/4 ply Karded peeler.....lb.	.4234
9¾ ounce 60" 10/2 ply Karded peeler.....lb.	.36
CORD FABRICS	
23/5/3 Karded peeler, 1½" cotton.....lb.	.4234
23/4/3 Karded peeler, 1½" cotton.....lb.	.4334
15/3/3 Karded peeler, 1½" cotton.....lb.	.4034
13/3/3 Karded peeler, 1½" cotton.....lb.	.3934
7/2/2 Karded peeler, 1½" cotton.....lb.	.3734
23/5/3 Karded peeler, 1½" cotton.....lb.	.5134
23/5/3 Karded Egyptian, Egyptian upper cotton.....lb.	.5434
23/5/3 Combed Egyptian.....lb.	.5834
LENO BREAKER	
8¼ ounce and 10¼ ounce 60" Karded peeler.....lb.	.35

*Prices for 1,200 yards of a width or over.

put ordered by NRA Administrator Johnson; consequently tire manufacturers who operate fabric mills have the advantage over independents. The fabric market is therefore very dead, and prices are unchanged from last month.

Crude Rubber

(Continued from page 65)

quiet. Dealers report that factories made heavy purchases on the rise, and some over-bought. Much of the slack must be ascribed to the muddled state of the restriction agreement, which many expect will be altered to provide a more immediate remedy for over-production of raw rubber. Prices were unchanged from last week.

Week ended May 26. Only 300 tons were traded on Monday, with prices closing up by 5 to 6 points. Almost no news was forthcoming; the London market was closed for the holiday; and traders decided to wait.

Cram's Automotive Reports revealed that last week's output of cars was 75,550 units, compared with 79,305 in the previous week and 55,801 in the same week last year. Ten companies again cut operations, with Chevrolet dropping to 16,100 from 19,200. Sales were reported quieter, despite the Dow-Jones report of Saturday, especially in the medium and high-priced brackets.

April automobile production was 360,620 units, an increase of 7.4% over March and 99.4% above April, 1933, according to the Department of Commerce. For the first 4 months sales at the factory were 1,093,103 units, against 535,690 in the same 1933 period.

Activity was greater on Tuesday, but prices sold off again by 16 to 20 points. Liquidation was by speculators who expected the market to show little improvement unless restriction quotas are revised.

On the next 2 days quiet markets resulted in easier prices, the current month falling below 12¢ a pound for the first time in several weeks. Factory business was very scarce in the Outside Market.

On Friday rubber was firmer; exchange futures rose; and actuals strengthened; resulting from more favorable restriction news and upturns in domestic commodities.

On Saturday rubber, despite firm cables and the favorable Malayan census report for April, could not maintain its early gains because of labor difficulties.

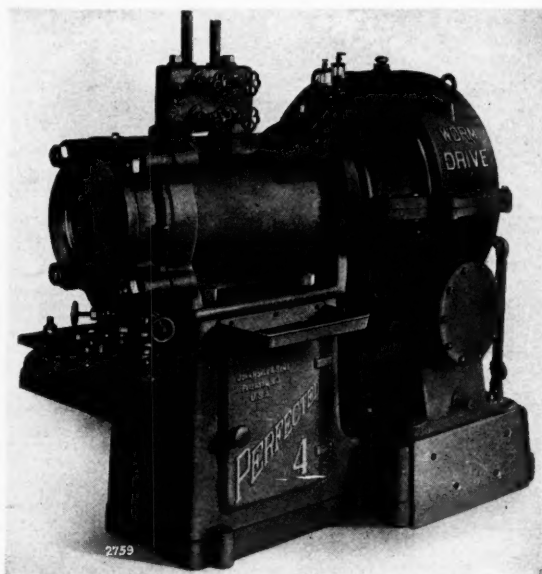
Closing prices were: July 12.35¢ against 13.00¢; September 12.63 against 13.25; October 12.74 against 13.36; December 12.96 against 13.57; January 13.08 against 13.65; and March 13.25 against 13.91.

In the Outside Market a small business developed. Closing prices: May-June 12½¢ against 13.00¢ last Saturday; July-September 12½¢ against 13¼¢; October-December 13.00 against 13½¢; and January-March 13¼¢ against 14.00.

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Standard equipment throughout the industry for rapid extrusion of inner tubes, treads, hose, heels, jar rings, tubing, channels, solids, rubber coverings, and strained rubber.



Royle 6-inch Tuber
Also made in seven other sizes

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Regular and Special Constructions of COTTON FABRICS

**Single Filling Double Filling
and**

**ARMY
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Ducks

Drills

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Osnaburgs**

**Curran & Barry
320 BROADWAY
NEW YORK**

IMPORTS, CONSUMPTION, AND STOCKS

CONSUMPTION of crude rubber by United States manufacturers for April amounted to 44,947 long tons, compared with 47,097 (revised) long tons for March, a decrease of 4.6% under March, but 73.4% above April, 1933, according to R. M. A. statistics. Consumption for April, 1933, was 25,928 (revised) long tons.

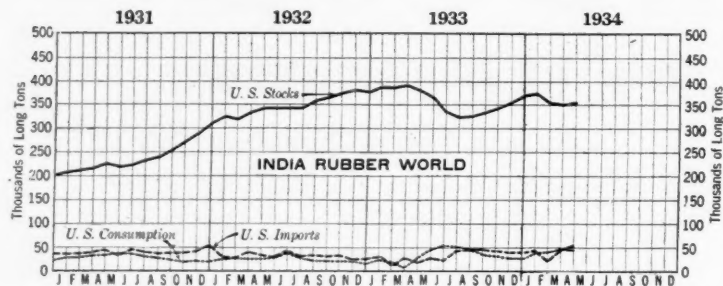
Crude rubber imports for April, 1934, were 45,662 long tons, 2.4% over March and 134.7% above April, 1933.

The estimated total domestic stocks of crude rubber on hand April 30 were 351,981 long tons, against March 31 stocks of 353,242 long tons. April stocks were practically unchanged compared with March, but were 7.9% below stocks of April 30, 1933.

Crude rubber afloat for the United States ports on April 30 was 56,251 long tons, compared with 54,722 long tons afloat on March 31 this year, and 30,745 long tons afloat on April 30, 1933.

London and Liverpool Stocks

Tons		
Week Ended	London	Liverpool
Apr. 28	42,539	53,917
May 5	41,815	53,915
May 12	42,098	54,268
May 19	41,900	54,123
May 26	42,118	54,276



United States Stocks, Imports and Consumption

United States and World Statistics of Rubber Imports, Exports, Consumption, and Stocks

Twelve Months	U. S. Net Imports* Tons	U. S. Consumption Tons	U. S. Stocks on Hand† Tons	U. S. Stocks Afloat† Tons	United Kingdom Stocks Tons	Singapore and Penang, Etc. Stocks† Tons	World Production (Net Exports)† Tons	World Consumption Estimated Tons	World Stocks† Tons
1930	488,343	375,980	200,998	56,035	118,297	45,179	821,815	684,993	356,034
1931	495,163	348,985	322,825	40,455	127,103	55,458	797,441	668,660	495,724
1932	400,787	332,000	379,000	38,360	92,567	36,802	709,840	670,250	518,187
1933	411,615	405,687	364,541	55,606	86,438	48,744	845,291	818,370	489,029
1934									
January ...	46,204	40,413	368,660	45,768	90,272	51,427	81,487	77,200	510,359
February ..	31,032	40,609	357,094	53,063	92,482	52,580	88,239	82,100	502,155
March	44,605	47,097	353,242	54,722	94,314	59,224	92,070	78,000	504,601
April	45,662	44,947	351,981	56,251	.....	.....	.....	.....	.....

*Including liquid latex, but not guayule. †Stocks on hand the last of the month or year. ‡W. H. Rickinson & Son's figures. §Stocks at the 3 main centers, U. S. A., U. K., Singapore and Penang.

RECLAIMED RUBBER

RUBBER goods manufacturers plan to increase their use of reclaim in part replacement for crude in event of higher prices resulting from restriction. The advance in crude was discounted and in the past month did not materi-

ally increase the current quotations on reclaim. The percentage consumption of reclaim to crude advanced steadily during the first quarter of the year. Reclaiming plants are all busy and anticipate further increase of activity.

All prices are firm, nominal, and subject to change. Most grades are quoted unchanged from one month ago. The exceptions are advances in super-reclaim black, up $\frac{1}{4}$ ¢; white auto tire and No. 1 tube, each up 1¢.

United States Reclaimed Rubber Statistics—Long Tons

Year	Production	Consumption	Consumption Per Cent to Crude	United States Stocks*	Exports
1930	157,967	153,497	41.5	24,008	9,468
1931	132,462	125,001	35.7	19,257	6,971
1932	75,656	77,500	23.3	21,714	3,536
1933	99,974	81,612	20.1	20,746	3,583
1934					
January	9,828	7,000	17.3	24,303	333
February	9,504	7,646	18.8	23,356	282
March	11,479	9,683	20.3	25,113	354
April	10,185	9,387	20.9	22,033	...

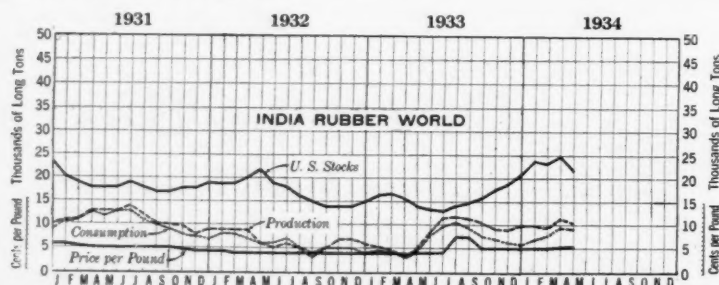
*Stocks on hand the last of the month or year.
Compiled by The Rubber Manufacturers Association, Inc.

New York Quotations

	May 26, 1934	Spec. Grav.	Cents per Lb.
High Tensile			
Super-reclaim, black	1.20		8 $\frac{3}{4}$ /9
red	1.20		7 / 7 $\frac{1}{4}$
Auto Tire			
Black	1.21		5 / 5 $\frac{1}{4}$
Black selected tires	1.18		5 $\frac{1}{4}$ /5 $\frac{1}{2}$
Dark gray	1.35		6 $\frac{3}{4}$ /6 $\frac{3}{4}$
White	1.40		9 $\frac{1}{4}$ /9 $\frac{1}{2}$
Shoe			
Unwashed	1.60		6 $\frac{1}{2}$ /6 $\frac{3}{4}$
Washed	1.50		8 / 9
Tube			
No. 1	1.00		13 /
No. 2	1.10		7 $\frac{1}{2}$ /7 $\frac{3}{4}$
Truck Tire			
Truck tire, heavy gravity	1.55		5 $\frac{1}{4}$ /5 $\frac{1}{2}$
Truck tire, light gravity	1.40		5 $\frac{1}{4}$ /6
Miscellaneous			
Mechanical blends	1.60		4 $\frac{1}{4}$ /4 $\frac{1}{2}$

Tire Prices Raised

An irregular price increase, ranging from 5 to 15% on third and fourth line automobile tires, was announced by the major rubber companies, effective May 11. The increase will average about 15% on fourth line tire brands.



Production, Consumption, Stocks, and Price of Tire Reclaim

CLASSIFIED ADVERTISEMENTS

SITUATIONS WANTED

SALES CONNECTION DESIRED BY CAPABLE, EXPERIENCED, profit-making men with excellent clientele. Mill must be aggressive and capable of producing coated textiles for cutting up trades. Would consider only reliable rubber mill seeking new fields and established market. Commission or exclusive agency considered. Address Box No. 380, care of INDIA RUBBER WORLD.

CHEMIST, B.S.C., 5 YEARS' EXPERIENCE IN RUBBER TESTING, compounding, and production work. 9 years in other lines of chemistry. Available at once. Address Box No. 376, care of INDIA RUBBER WORLD.

COMMERCIAL RESEARCH EXPERT, AGE 26; RUBBER STATISTICIAN and market specialist; 4 years' business experience; high university degrees in economics; international education; desires to prove his value to some company. Address Box No. 377, care of INDIA RUBBER WORLD.

GENERAL SUPERINTENDENT, 18 YEARS' EXPERIENCE manufacturing tires and tubes with best firms, desires connection with responsible firm. At present employed; desires to make a change. Very best of references. Address Box No. 373, care of INDIA RUBBER WORLD.

WANTED: POSITION AS FOREMAN OF MILL AND CALENDER room, tires, sundries, and mechanicals. Have had years of experience and can produce results. Address Box No. 381, care of INDIA RUBBER WORLD.

POSITION OF RESPONSIBILITY WANTED BY GRADUATE chemist with broad experience in compounding and manufacture of mechanicals, including hose, belting, molded goods, sundries, etc. Address Box No. 382, care of INDIA RUBBER WORLD.

SITUATIONS OPEN

SUPERINTENDENT FOR RUBBER FACTORY MANUFACTURING automotive products except tires. Product includes soft and hard mechanical rubber parts, also extruded goods. This is an old-established company, and only men with modern factory operating experience will be considered; man having automotive experience preferred. Give complete details regarding experience, age, salary, and references in first letter. All replies held in strict confidence. Address Box No. 369, care of INDIA RUBBER WORLD.

WANTED: A MAN WITH TIRE FACTORY EXPERIENCE TO SET piece rates. Applicant must be an experienced and efficient time study man and must have worked on tire processes. Address Box No. 370, care of INDIA RUBBER WORLD.

MAN WANTED: EXPERIENCED ON SUPERVISION OF HAND made gloves and mittens. Address Box No. 371, care of INDIA RUBBER WORLD.

OLD, WELL ESTABLISHED MANUFACTURER OF RUBBER COMPOUNDING material wants as chemist and technical representative a young graduate chemist or chemical engineer with several years of practical experience in moderate sized factory manufacturing rubber goods, preferably tires and mechanicals. Must possess tact and resourcefulness, and furnish proof of real ability in the solution of factory processing problems. Work will include research, compound development, and occasional visits to factories using our product. Address Box No. 372, care of INDIA RUBBER WORLD.

WANTED BY EASTERN RUBBER MANUFACTURER: CHEMIST and factory manager with wide experience, molded, extruded, and cut rubber goods. State in confidence past responsibilities and pay expected. Address Box No. 379, care of INDIA RUBBER WORLD.

Morris Trimming Machines

are used by the leading rubber manufacturers of the world.

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MECHANICAL MOLDED RUBBER GOODS

We Solicit Your Inquiries

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A hard, stable compound—produced under the exacting supervision of an experienced and up-to-date laboratory.

Aging tests have proved Genasco to be always of uniform quality. Shipped to all parts of the world in metal drums. Stocks carried at Maurer, N. J. and Madison, Ill.

THE BARBER ASPHALT COMPANY
Philadelphia New York Chicago St. Louis

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WE SPECIALIZE IN MOLDS FOR
Heels, Soles, Slabs, Mats, Tiling and
Mechanical Goods

MANUFACTURED FROM SELECTED HIGH
GRADE STEEL BY TRAINED CRAFTSMEN, INSURING
ACCURACY AND FINISH TO YOUR
SPECIFICATIONS. PROMPT SERVICE.

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SOLE DISTRIBUTORS FOR U. S. A. AND CANADA:

Revertex Corp. of America
40 RECTOR STREET NEW YORK, N. Y.

Netherlands East Indies

(Continued from page 56)

The young buddings, comprising various clones, covered 1.85 hectares, and 8 rows, 158 trees, were tested by the first method and 16 rows, 316 trees, by the second.

During June and July, 1933, the entire area was tapped alternate daily over half the circumference to determine the yielding capacity of the trees. In August the actual test commenced and was continued through December, 1933. After the second month of the real test tapping every fourth day with lavish bark removal gave yields that amounted to 90% of those obtained by alternate monthly tapping with normal bark consumption. These figures are considered very favorable since tapping costs are 50% less with the former method than with the latter. The experiment has not been conducted long enough to justify adoption of the fourth-day tapping system on a large scale, but results are sufficiently encouraging to warrant estates starting small-scale tests themselves.

India

A widespread desire seems to exist in the rubber-producing countries in the East to manufacture their own rubber goods. Now comes the report that the Maharajah of Travancore, India, who is very progressive, has sanctioned the establishment of a rubber factory. To investigate the possibilities for such a factory, J. Helen, of Karachi, was engaged, and he toured the country with the Director of Industries. In an elaborate report he recommends opening a factory to cost 300,000 rupees. Mr. Helen believes a variety of goods as inner tubes, tires for cycles and rickshaws, sheets, rubberized fabric for raincoats, hose, tubing, toys, hot water bottles and other molded goods, carpets, etc., could very well be produced locally.

Travancore has 64,113 acres under rubber, about $\frac{1}{4}$ the total rubber area in India, so that adequate amounts of rubber are expected to be available; while it further seems that other raw materials are also abundant.

"Alnor" Surface Temperature Pyrometers. Illinois Testing Laboratories, Inc., Chicago, Ill. This bulletin, No. 1,727, is descriptive of a conveniently portable instrument for ascertaining surface temperatures of materials and production machinery, molds, etc.

"Evidence of Improved Quality through Better Temperature Regulation." The Brown Instrument Co., Philadelphia, Pa. The message of this broadside is of special interest to manufacturing industries, such as rubber, where close temperature control is a vital factor in processing.

EDITOR'S BOOK TABLE

New Publications

"Factice in Rubber Compounding." The Stamford Rubber Supply Co., Stamford, Conn. This neat little brochure gives the rubber compounder concise, practical information on the 2 general classes of factice, their grades, methods of manufacture, and uses. The rubber compounder will find factice of distinct advantage to improve the processing and quality of rubber stocks for many products, including proofed fabrics, double textures, rollers, erasers, sponge rubber, insulation, molded goods, etc. New developments have made factice available with ultra-accelerators and in latex compounding with distinct advantage.

"Miscellaneous Tubing and Extruded Compounds." Laboratory Report No. 174. E. I. du Pont de Nemours & Co., Inc., Rubber Chemicals Division, Wilmington, Del. This report is prefaced with pertinent remarks concerning extruded compounds, followed by mixing formulae for syringe and bath spray tubing, windshield wiper tubing, upholstery tubing, and miscellaneous tubing and gasket stock. Physical data and suggestions for handling each stock also are given.

"Hawley Conversion Tables." H. W. Hawley, 692 Ridge St., Newark, N. J. Within the 18 pages of this pocket-size booklet are contained useful conversion tables of American and English money at any rate of exchange, also decimals of a pound Sterling and weight conversion tables. Much concise general information of value to trans-oceanic shippers and travelers is given. Price 50¢.

"The Automobile Buyer's Guide." 1934 Edition. Customer Research Staff, General Motors, Detroit, Mich. This highly important booklet of 84 pages is replete with notes and suggestions compiled and illustrated to serve the motorist as a cross-index to the usual automobile catalog. The general car characteristics covered are dependability, economy, safety, appearance, comfort, ease of control, smoothness, pick up, and speed. The booklet is well indexed and worthy of careful study by every sincere motorist.

Proposed Federal Specifications for Rubber Heels; Erasers, Rubber and Rubber Substitute; Tubular Rubber Tourniquet. Federal Specifications Board, Room 735, Federal Warehouse, Washington, D. C. This board adopts purchase specifications for commodities bought by the various departments and establishments of the United States Government. Those mentioned here are submitted for criticism, comments, or suggestions on the part of trade journals, associations, manufacturers, or producers. The limiting date for such criticism on the above specifications is June 23, 1934.

Book Reviews

"Annual Survey of American Chemistry." Vol. VIII, 1933. Edited by Clarence J. West. Published for National Research Council by The Chemical Catalog Co., Inc., 330 W. 42nd St., New York, N. Y. Cloth, 403 pages, 5½ by 8½ inches. Indexed. Price \$4.50.

This survey of chemical progress covers 25 topics, of which 12 are confined to the field of pure science. Among the topics of industrial interest is that of rubber reviewed by H. L. Trumbull, research chemist of The B. F. Goodrich Co., Akron, O. The scope of this chapter covers discussion and references to published work on the following subjects of rubber research: crude rubber; rubber hydrocarbon; purification and properties; vulcanization and the structure of vulcanized rubber; accelerators of vulcanization; age resisters; control and testing; pigments; compounding ingredients; cements and adhesives; rubber technology; latex and rubber dispersions; synthetic rubber and rubber-like products; and rubber derivatives.

"Rubber Producing Companies — 1934." Compiled by the Mincing Lane Tea & Rubber Share Brokers' Association, Ltd., 14 Mincing Lane, London, E.C.3, England. Published by "The Financial Times," Ltd., 72 Coleman Street, London, E.C.2.

This standard work follows the lines of previous editions. The authentic and exhaustive information concerning over 575 companies, includes capital, acreage, latest accounts, crops, purchase price, dividends, forward sales, estimates, etc. Particulars are also given of many companies with tea and coffee interests, also a list of directors and secretaries of rubber companies.

"1934 Year Book." The Tire & Rim Association, Inc., 1401 Guarantee Title Bldg., Cleveland, O. This official publication of 82 pages contains full and official data on tires, rims, gages, etc. for automotive use. The information is arranged and thumb indexed as it applies to the following classifications of equipment: namely, passenger car, truck and bus, motorcycle, airplane, tractor, and solid and cushion tires.

"Handbook of Belting." The Good-year Tire & Rubber Co., Inc., Akron, O. This second edition contains all the outstanding features of the previous edition with revisions and additions to keep the book abreast of the most recent developments in belting practice. The scope of the book includes complete data on belt design, flat transmission belts, V-belt drives, belt conveyers, elevator belts, and design and operation of belt elevators.

ERNEST JACOBY**Crude Rubber****Liquid Latex****Carbon Black****Clay**

Stocks of above carried at all times

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Washers' Cuffs made of rubber. Address C. P. 72, Metis Beach, P. Q., Canada.

UNUSUAL OPPORTUNITY FOR A CAPABLE RUBBER EXECUTIVE to obtain part or full control of a going rubber manufacturing business, molded, cut, and extruded, now employing more than one hundred hands. Located within one hundred miles of New York. Long established trade both domestic and export. Address Box No. 378, care of INDIA RUBBER WORLD.

SPONGE RUBBER MANUFACTURER, DESIRING SALES REPRESENTATION on commission basis to handle Detroit automobile trade, communicate with Box No. 383, care of INDIA RUBBER WORLD.

FOR SALE: EASTERN FACTORY EQUIPPED WITH CALENDERS, spreaders, churns, mills, heaters, vulcanizers, doublers, impregnator, complete and ready to operate. Reasonable. Address Box No. 386, care of INDIA RUBBER WORLD.

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WANTS TO BUY**

special patents, processes, or formulae for the manufacture of sponge rubber.

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Operating, Globe, Angle, or Check Valves—
Hydraulic Presses, Accumulators, Pumps, etc.
—For almost any size or pressure.

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Gutta Percha****LITTLEJOHN & CO., Inc.****IMPORTERS****133 FRONT STREET****NEW YORK**

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FOR THE FAR WEST**

An old established and aggressive distributor of rubber compounding materials—with offices and sales organization in the midwest and Pacific Coast—is interested in securing two or three more representative lines of cotton fabric or rubber chemicals.

We have the standing, the capital, and the contacts to build business for you under the usual arrangements.

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BAIRD**RUBBER & TRADING CO., Inc.****CRUDE RUBBER****AND****LIQUID LATEX**

233 Broadway

New York

United States Statistics

Imports for Consumption of Crude and Manufactured Rubber

	February, 1934		Two Months Ended February, 1934	
	Pounds	Value	Pounds	Value
UNMANUFACTURED—Free				
Crude rubber	76,909,622	\$5,262,711	184,345,843	\$12,665,834
Liquid latex	1,983,210	193,732	4,505,171	432,786
Jelutong or pontianak	1,014,283	102,471	2,730,588	272,437
Balata	152,724	36,346	373,133	80,278
Gutta percha	356,281	28,460	491,801	40,132
Scrap and reclaimed, etc.	534,183	3,503	1,137,205	6,469
Totals	80,950,303	\$5,627,223	193,583,741	\$13,497,936
Chicle, crude	326,932	\$68,556	970,791	\$210,453
MANUFACTURED—Dutiable				
Rubber soled footwear with fabric uppers	130,581	\$47,554	340,933	\$101,427
Rubber toys		18,897		47,484
Druggists' sundries, n. e. s.		3,590		10,395
Combs, hard rubber	204,936	10,602	331,944	15,728
Golf balls	11,520	2,284	15,648	3,342
Tennis and other rubber balls	156,770	9,603	186,962	12,344
Tires	1,667	5,365	1,980	6,411
Other rubber manufactures		31,832		66,323
Totals		\$129,727		\$263,454

Exports of Foreign Merchandise

RUBBER AND MANUFACTURES				
Crude rubber	4,777,632	\$476,232	9,201,395	\$828,348
Balata	3,921	1,201	15,018	3,226
Rubber manufactures		166		1,517
Totals		\$477,599		\$833,091

Exports of Domestic Merchandise

RUBBER AND MANUFACTURES				
Reclaimed	631,296	\$27,912	1,376,401	\$63,397
Scrap	3,962,865	70,310	7,440,984	143,165
Rubberized automobile cloth, sq. yd.	55,210	26,850	120,444	58,541
Other rubberized piece goods and hospital sheeting, sq. yd.	50,583	23,357	89,338	39,973
Footwear				
Boots	3,811	10,704	12,501	32,001
Shoes	8,154	5,283	28,605	18,997
Canvas shoes with rubber soles	5,551	4,285	9,787	7,789
Soles	2,974	4,488	10,374	10,374
Heels	30,841	15,651	55,077	27,864
Water bottles and fountain syringes	15,620	5,600	28,238	10,662
Gloves	3,008	6,214	7,212	14,180
Other druggists' sundries		22,951		51,558
Balloons	19,314	17,767	44,362	40,441
Toys and balls		2,630		5,304
Bathing caps	9,935	16,354	19,512	30,862
Bands	19,009	6,643	37,725	12,251
Erasers	24,522	14,293	40,073	21,971
Hard rubber goods				
Electrical goods	133,634	15,598	205,797	23,469
Other goods		10,988		19,557
Tires				
Truck and bus casings, number	14,522	259,223	29,427	491,818
Other automobile casings, number	57,062	434,964	121,865	890,906
Tubes, auto., number	49,579	58,986	102,041	113,161
Other casings and tubes, number	1,772	4,553	3,100	7,723
Solid tires for automobiles and motor trucks, number	615	18,221	1,241	36,274
Other solid tires, number	135,209	16,880	282,681	33,964
Tire sundries and repair materials		20,534		51,197
Rubber and friction tape	46,046	11,772	92,512	22,849
Belting	180,256	77,470	346,705	152,831
Hose	303,255	88,760	605,175	175,796
Packing	92,839	33,554	182,458	74,344
Thread	88,608	56,831	197,192	118,052
Other rubber manufactures		95,520		165,335
Totals		\$1,484,246		\$2,966,606

Imports by Customs Districts

	March, 1934		March, 1933	
	Pounds	Value	Pounds	Value
Massachusetts	7,800,190	\$631,631	5,740,849	\$183,272
New York	74,672,796	\$5,529,301	50,428,514	\$1,511,297
Philadelphia	2,719,825	193,960	1,038,022	36,594
Maryland	3,669,680	232,741	1,993,274	55,622
New Orleans			268,800	8,457
Los Angeles	4,961,469	363,872	3,478,233	98,369
San Francisco	585,000	52,468		
Oregon	44,800	4,011	22,400	982
Washington	11,200	975		
Ohio	69,078	5,469	83,460	5,139
Colorado	112,000	8,290	728,000	23,656
Totals	94,646,038	\$7,022,718	63,783,552	\$1,923,388

*Crude rubber including latex dry rubber content.

Rubber Goods Production Statistics

	1934		1933	
	February	February	February	February
TIRES AND TUBES				
Pneumatic casings				
Production	thousands	4,205	thousands	1,871
Shipments, total	thousands	3,186	thousands	1,834
Domestic	thousands	3,106	thousands	1,764
Stocks, end of month	thousands	10,403	thousands	5,902
Solid and cushion tires				
Production	thousands	12	thousands	7
Shipments, total	thousands	13	thousands	8
Domestic	thousands	12	thousands	7
Stocks, end of month	thousands	28	thousands	21
Inner tubes				
Production	thousands	3,956	thousands	1,779
Shipments, total	thousands	3,224	thousands	1,682
Domestic	thousands	3,164	thousands	1,646
Stocks, end of month	thousands	8,892	thousands	5,085
Raw material consumed				
Fabrics	thous. of lbs.	18,721	thous. of lbs.	7,263
MISCELLANEOUS PRODUCTS				
Rubber bands, shipments	thous. of lbs.	220	thous. of lbs.	167
Rubber clothing, calendered				
Orders, net	no. of coats and sundries	15,246	no. of coats and sundries	7,327
Production	no. of coats and sundries	20,062	no. of coats and sundries	16,330
Rubber-proofed fabrics, production, total	thous. of yds.	3,194	thous. of yds.	2,146
Auto fabrics	thous. of yds.	301	thous. of yds.	243
Raincoat fabrics	thous. of yds.	1,429	thous. of yds.	616
Rubber flooring, shipments	thous. of sq. ft.	393	thous. of sq. ft.	269
Rubber and canvas footwear				
Production, total	thous. of prs.	3,275	thous. of prs.	2,185
Tennis	thous. of prs.	2,185	thous. of prs.	1,090
Waterproof	thous. of prs.	3,194	thous. of prs.	2,256
Shipments, total	thous. of prs.	3,537	thous. of prs.	2,256
Tennis	thous. of prs.	2,256	thous. of prs.	1,281
Waterproof	thous. of prs.	3,511	thous. of prs.	2,245
Shipments, domestic, total	thous. of prs.	1,267	thous. of prs.	15,088
Tennis	thous. of prs.	6,937	thous. of prs.	8,151
Waterproof	thous. of prs.	16,243	thous. of prs.	13,030
Rubber heels				
Production	thous. of prs.	20,544	thous. of prs.	10,888
Shipments, total	thous. of prs.	175	thous. of prs.	221
Export	thous. of prs.	9,273	thous. of prs.	2,909
Repair trade	thous. of prs.	11,096	thous. of prs.	7,758
Shoe manufacturers	thous. of prs.	38,986	thous. of prs.	25,267
Stocks, end of month	thous. of prs.	5,711	thous. of prs.	4,008
Rubber soles				
Production	thous. of prs.	5,804	thous. of prs.	3,728
Shipments, total	thous. of prs.	1	thous. of prs.	3
Export	thous. of prs.	617	thous. of prs.	362
Repair trade	thous. of prs.	5,186	thous. of prs.	3,362
Shoe manufacturers	thous. of prs.	5,010	thous. of prs.	3,121
Stocks, end of month	thous. of prs.	3,565	thous. of dollars	1,815
Mechanical rubber goods, shipments	thous. of dollars	757	thous. of dollars	352
Total	thous. of dollars	1,147	thous. of dollars	633
Belting	thous. of dollars	1,660	thous. of dollars	830
Hose	thous. of dollars		thous. of dollars	
Other	thous. of dollars		thous. of dollars	

Source: Survey of Current Business, Bureau of Foreign & Domestic Commerce, Washington, D. C.

London Stocks, March, 1934

	Landed		Stocks, March 31		
	Tons	De-livered Tons	1934 Tons	1933 Tons	1932 Tons
LONDON					
Plantation	7,543	6,794	40,477	40,635	64,220
Other grades	10	10	24	54	60
LIVERPOOL					
Plantation	*2,500	*1,417	*53,813	*53,876	*60,695
Total tons, London and Liverpool	10,053	8,221	94,314	94,565	124,975

*Official returns from the recognized public warehouses.

World Rubber Shipments—Net Exports

	Long Tons—1934			
	Jan.	Feb.	Mar.	Apr.
British Malaya				
Gross exports	55,055	57,867	58,515	56,748
Imports	21,184	19,688	26,470	27,963
Net	33,871	38,179	32,045	28,785
Ceylon	6,929	8,620	6,750	5,783
India and Burma	1,531	775		
Sarawak	1,197	1,005	1,360	
British N. Borneo	*750	*750	*750	*750
Siam	1,290	1,264	1,363	
Java and Madura	6,513	6,706	8,655	
Sumatra E. Coast	8,974	10,277	12,043	
Other N. E. Indies	17,718	17,466	25,064	
French Indo-China	2,158	1,100	1,316	
Amazon Valley	576	831	846	
Africa	*200	*200	*200	*200
Totals	81,707	87,173		

*Estimate. Compiled by Leather-Rubber-Shoe Division, Department of Commerce, Washington, D. C.

